

Al-Fārābī on Unity

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April, 2024

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of
Doctor of Philosophy

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Abstract

This dissertation discusses al-Fārābī's views on unity presented in his *Kitāb al-wāḥid wa-l-waḥda* (*Book of the One and Unity*) (henceforth *KW*) by explaining them along with al-Fārābī's wider metaphysical project and the earlier philosophical works that informed al-Fārābī's views on unity. Al-Fārābī's discussion of the senses of unity and multiplicity in *KW* has its origin primarily in Aristotle's discussion of unity and multiplicity in *Metaphysics* Δ.6, but there are some major differences between al-Fārābī's discussion of unity and multiplicity in his *KW* and Aristotle's corresponding discussion in the *Metaphysics*. This dissertation spells out two of these major differences. This dissertation has three chapters. In Chapter 1, I place *KW* in the context of al-Fārābī's wider metaphysical project. I review al-Fārābī's accounts of the subject-matter of metaphysics as a demonstrative science, and I explain how al-Fārābī implemented his understanding of what metaphysics deals with in a number of metaphysical works including *KW*. In Chapters 2 and 3, I explain the two major differences between al-Fārābī and Aristotle. In Chapter 2, I explain how and why al-Fārābī significantly changed Aristotle's account of the one in number (*hen arithmō(i)* / *kat' arithmon* = *wāḥid bi-l-'adad*). Unlike Aristotle, al-Fārābī explicitly distinguishes the senses of unity used in many-place contexts and those used in one-place contexts; for example, when we say that the point is one because it is not quantitatively divided, we use "one" in a one-place context, signifying a property of the point; on the other hand, when we say that Zayd and 'Amr are one in species because they have the same species, we use "one" in a many-place context, signifying a relation between Zayd and 'Amr. Al-Fārābī articulates his idea of unity in number so that it grounds all the senses of unity used in many-place contexts. His direct source for articulating his idea of unity in number is not Aristotle's discussion of the one in number in the *Metaphysics* but it is Aristotle's discussion of (the one and) the same in number in *Topics* I.7. In Chapter 3, I discuss the second major difference between al-Fārābī and Aristotle. Al-Fārābī's senses of unity by virtue of circumscription (*inḥiyāz*) (by a place (*makān*) or by an extremity (*nihāya*) or by a quiddity (*māhiyya*)) do not have precedents in Aristotle. To put it briefly, X is said to be one by virtue of circumscription by Y because X has Y and nothing else in the relevant class has Y. So, Y 'unifies' X by containing it and separating it from other things. In this chapter, I clarify what al-Fārābī means when he talks about circumscription in general and circumscription by a quiddity in particular. Then, I discuss some texts from late antique Greek philosophers that likely provided starting points or confirmations for al-Fārābī's ideas of unity by virtue of circumscription. Finally, I suggest that al-Fārābī's motivation for developing this sense of unity and extending the idea of circumscription to the corresponding sense of being by virtue of circumscription by an extramental quiddity was to make better sense of the argument for the equivalence between being and unity that Aristotle presents in *Metaphysics* Γ.2 and Iota 2. In addition to several topical appendices, this dissertation contains an English translation of *KW* as an appendix.

Résumé

Cette dissertation examine les vues d'al-Fārābī sur l'unité présentées dans son *Kitāb al-wāḥid wa-l-waḥda* (*Livre de l'Un et de l'Unité*) (ci-après *KW*) en les expliquant dans le cadre du projet métaphysique plus large d'al-Fārābī et des travaux philosophiques antérieurs qui ont informé les vues d'al-Fārābī sur l'unité. La discussion d'al-Fārābī sur les sens de l'unité et de la multiplicité dans *KW* a son origine principalement dans la discussion d'Aristote sur l'unité et la multiplicité dans *Métaphysique* Δ.6, mais il existe des différences majeures entre les deux textes. La présente thèse met en lumière deux de ces différences majeures et comporte trois chapitres. Dans le chapitre 1, je place *KW* dans le contexte du projet métaphysique plus large d'al-Fārābī. Je passe en revue les conceptions d'al-Fārābī sur l'objet de la métaphysique en tant que science démonstrative, et j'explique comment al-Fārābī a mis en œuvre sa compréhension de ce dont traite la métaphysique dans un certain nombre d'ouvrages métaphysiques dont *KW*. Dans les chapitres 2 et 3, j'explique les deux principales différences entre al-Fārābī et Aristote sur la question de l'unité. Dans le chapitre 2, j'explique comment et pourquoi al-Fārābī a modifié de manière significative la conception d'Aristote sur l'un dans le nombre (*hen arithmō(i) / kat' arithmon* = *wāḥid bi-l-'adad*). Contrairement à Aristote, al-Fārābī distingue explicitement les sens de l'unité utilisés dans des contextes à plusieurs termes et ceux utilisés dans des contextes à un terme. Par exemple, lorsque nous disons que le point est un parce qu'il n'est pas divisé quantitativement, nous utilisons "un" dans un contexte à un terme, signifiant une propriété du point. Toutefois, lorsque nous disons que Zayd et 'Amr sont une seule espèce parce qu'ils ont la même espèce, nous utilisons "un" dans un contexte à plusieurs termes, signifiant une relation entre Zayd et 'Amr. Al-Fārābī articule son idée d'unité numérale de manière à ce qu'elle fonde tous les sens de l'unité utilisés dans des contextes à plusieurs termes. Sa source directe pour articuler son idée d'unité dans le nombre n'est pas la discussion d'Aristote sur l'un dans le nombre dans la *Métaphysique*, mais la discussion d'Aristote sur (l'un et) le même dans le nombre dans les *Topiques* I.7. Au chapitre 3, j'aborde la deuxième différence majeure entre al-Fārābī et Aristote. Les sens de l'unité identifiés par al-Fārābī en vertu de la circonscription (*inḥiyāz*) (par un lieu (*makān*), une extrémité (*nihāya*) ou une quiddité (*māhiyya*)) n'ont pas de précédents chez Aristote. En bref, on dit que X est un en vertu de sa circonscription par Y parce que X a Y et que rien d'autre dans la classe concernée n'a Y. Ainsi, Y "unifie" X en le contenant et en le séparant des autres choses. Dans ce chapitre, je clarifie ce qu'al-Fārābī veut dire lorsqu'il parle de circonscription en général et de circonscription par une quiddité en particulier. Je discute ensuite de certains textes de philosophes grecs de l'Antiquité tardive qui ont probablement fourni des points de départ ou des confirmations pour les idées d'al-Fārābī sur l'unité en vertu de la circonscription. Enfin, je suggère que la motivation d'al-Fārābī pour développer ce sens de l'unité et étendre l'idée de circonscription au sens correspondant de l'être en vertu de la circonscription par une quiddité extramentale était de mieux comprendre l'argument de l'équivalence entre être et unité qu'Aristote présente en *Métaphysique* Γ.2 et Iota 2. Cette thèse contient également plusieurs annexes thématiques, y compris une traduction anglaise de *KW*.

Acknowledgements

From its conception until the very last corrections, this dissertation owes the most to my primary supervisor, Stephen Menn. This is not only because this dissertation assumed the shape that it has thanks to all the feedback he gave on my thoughts on what I wanted to do in my dissertation or on earlier drafts of various parts of this dissertation. The explicit expressions of my thanks to him in footnotes in the following dissertation for particular details in it should be taken only as a sample of the improvements that his comments led or prompted me to make. This dissertation owes the most to him also because his classes I took or audited over the years expanded and deepened my knowledge of ancient and medieval philosophy and directly or indirectly contributed to the views expressed in various parts of this dissertation. Moreover, with the McGill Ancient and Medieval Philosophy Colloquium Series that he led, he maintained a vibrant venue at McGill for junior and senior scholars to present their papers and get comments on them from an audience with expertise in ancient and medieval philosophy. Finally, the ancient Greek reading group he led for over two years provided me with a great opportunity to improve my skills in the language, and it also showcased how to undertake philologically conscious philosophical examinations of difficult philosophical texts in ancient Greek. In all these, he exemplified what it takes to be a great scholar. Any sign of good scholarship one might find in this dissertation is a witness to the extent to which I succeeded in emulating the example he set.

I also owe thanks to my second supervisor, Rob Wisnovsky. His contribution to this dissertation project started very early on when he helped me as I started to work on my translation of al-Fārābī's *Kitāb al-wāḥid wa-l-waḥda* and with his helpful comments on my candidacy paper which formed the kernel of this dissertation. His contribution to this dissertation continued with his comments on the drafts of some parts of this dissertation. He alerted me to many typos and transliteration mistakes. His seminars on medieval Arabic philosophy allowed me to gain a deep knowledge of a number of topics in medieval Arabic philosophy and taught me that historical and philological considerations should not detract from but in fact contribute to our appreciation of these texts as *philosophical* texts; after all, we are interested in studying them because they contain interesting philosophical ideas.

What I learned from Alison Laywine in her classes I took or audited and the conversations we had about ancient Greek and medieval Arabic philosophy and sciences contributed to the development of some of my discussions in this dissertation. I would like to thank her for this.

I would also like to thank Carlos Fraenkel because the conversations we had about some general ideas I had at an early stage of my dissertation about what I wanted to do in it helped me narrow them down. His comments as the internal examiner of this dissertation will help me frame my arguments better when I turn this dissertation into a monograph in the future.

I would like to thank Riccardo Strobino for his comments as the external examiner of this dissertation which I will benefit from in the future iteration of this work.

Apart from Damien Janos' written work that I use and cite below, the conversations we had about al-Fārābī and unity in Arabic philosophy more generally contributed to my articulation of some of the important ideas presented below, especially in chapter 3. I am grateful to him also for his comments on a draft of this dissertation; the following dissertation reflects the corrections and the improvements prompted by his comments and I will make a greater use of his comments in

the future iteration of this work. I owe him thanks not only for these but also for showing the courtesy of coordinating his research with mine to minimize overlaps.

Emily Carson's classes on early modern philosophy and Kant encouraged me to expand my knowledge beyond ancient and medieval philosophy and I benefited from her assistance as the Director of Graduate Studies.

I learned a great deal about Aristotle from Marguerite Deslauriers, both in her classes and by working as a teaching assistant multiple times for her undergraduate course on Aristotle.

I presented some of the material used in chapter 3 of this dissertation at the 2019 Annual Meeting of American Oriental Society. I would like to thank Rosabel Ansari for encouraging me to present my paper at this conference and the audience there for their questions and comments. Also, I had the chance to read and discuss a part of al-Fārābī's *Kitāb al-wāḥid wa-l-waḥda* with the participants of a seminar on this work led by Peter Adamson and Rotraud Hansberger at the Munich School of Ancient Philosophy in the summer of 2018. I would like to thank all the participants of this seminar. Finally, I presented various parts of this dissertation project at several meetings of the McGill Ancient and Medieval Philosophy Colloquium Series organized by Stephen Menn. Let me take this as an opportunity to thank the regular participants of this Colloquium Series in some period of its long life who gave feedback on the material I presented and also made it more enjoyable to study ancient and medieval philosophy at McGill: in addition to Stephen Menn, Alison Laywine, and Andrea Falcon, I want to thank Alex Anderson, Aline Medeiros Ramos, André Martin, Isabelle Chouinard, Jeanne Allard, Kosta Gligorijevic, Léa Derome, Maribel Ramírez López, Moritz Bodner, Nicholas Aubin, Robert Roreitner, Sinem Kılıç, and Stavroula Theodorakopoulou.

Despite all the obviously bad things about the COVID-19 pandemic, at least one good thing it unleashed was the swift normalization of holding online reading groups. I was part of a Greek reading group led by Stephen Menn and I was also part of an Arabic (and later Arabic and Latin) reading group I organized with a group of friends. Both of these reading groups helped me practice my Greek and Arabic regularly, and in this respect, they contributed to my translations of Greek and Arabic works in this dissertation. Also, the philosophical discussions of the texts we were reading made indirect contributions to some of my discussions in this dissertation. I would like to thank the members of these reading groups, especially to Alex Anderson, André Martin, Argyro Lithari, Daniel Benjamin Miller, Heide König, Kosta Gligorijevic, Mansooreh Khalilizand, Maxim Roozen, Nicholas Aubin, Pantelis Golitsis, Rachel Parsons, Ruizhi Ma, Stavroula Theodorakopoulou, Thomas Slabon, and Zhenyu Cai.

My time in Montréal was all the more enjoyable with a group of peers who turned close friends: Aline, André, David Collins, Kosta, Léa, and Moritz. The joy of their friendship was among the driving forces for me to carry on my academic work, but I am also grateful to them as my peers for all the interesting philosophical conversations we had over the years and their help with dealing with the challenges of the academic life.

I should not pass without mentioning that I enjoyed sharing a flat with André for several years. Our time as flat mates afforded many opportunities for us to talk about each other's PhD projects and other research. Many times I turned to him for advice on or help with some problems - big and small. Our time as flat mates was also not lacking in intense philosophical debates on issues

some of which might have looked trifling to the outsiders. Trifling or not, who can appreciate a good debate better than the students of medieval philosophy!

I want to thank Argyro for helping me learn the basics of some topics in ancient astronomy.

I am grateful to Léa for translating my abstract into French.

Aline, Kosta, and Nick translated some texts for me or made some suggestions that I was meaning to use in my dissertation, but in the end, the limitation of time and space forced me to leave out some topics I was originally intending to discuss in the dissertation, and as a result their contributions did not make their way into the dissertation. I would like to thank them for their translations and suggestions.

This dissertation could not be finished in its current state without the digital resources I used. Of these, I benefited the most from *Thesaurus Linguae Graecae* (<http://www.tlg.uci.edu>), *Online Dictionary of Arabic Philosophical Terms* compiled and maintained by Andreas Lammer with the technical help of Raphael Kretz (<http://www.arabic-philosophy.com/dict/>), *Glossarium Graeco-Arabicum* by Gerhard Endress, Rüdiger Arnzen, and Yury Arzhanov (<https://glossga.bbaw.de/index.html>), and *A Digital Corpus for Graeco-Arabic Studies* initiated, supervised, and maintained by Mark J. Schiefsky, Gregory R. Crane, and Uwe Vagelpohl (<https://www.graeco-arabic-studies.org/home.html>).

I would like to thank Angela Fotopoulos and Shanshan Hua for their help as Graduate Student Coordinators that made my life in the McGill Philosophy Department easier.

I did the research for and wrote a good chunk of this dissertation at a number of cafés in two different cities in two different countries, Montréal and my hometown Niğde. I want to thank the people serving at these establishments who made me feel comfortable working on my dissertation with their courteous hospitality.

In the last three months of the writing of this dissertation, I worked at the Munich School of Ancient Philosophy. I would like to thank Peter Adamson, Eleni Gaitanu and others at MUSAPH who provided a very warm welcome and a comfortable environment for me to work.

I would like to thank Husayn Ibrahim and Francesco Zamboni for the conversations we had that helped me review a few points in my dissertation at the very last stage of it. Moreover, I greatly benefited from Husayn's expertise with the proofreading of the Arabic texts reproduced in this dissertation. Needless to say, all the remaining mistakes are mine.

I express my gratitude to my friends not because it is customary but as my sincere acknowledgement of the fact that I could not finish this project without their intellectual stimulation, emotional support, and the pure joy of talking with them: Elif, Sinan, Fikret, İrfan, Burak, Mehmet, Oğuz, Yusuf, Muzaffer, Kaan, Onur, Buğrahan, and Emrah. I should also mention here my sister and cousins that I count among my friends: Ahmet, Mahmut, Mehmet, Mehmet Emin, and Name.

Prior to coming to MUSAPH, for more than three years I stayed with my family in Niğde working on my dissertation. I could always rely on their support, both emotionally and financially, and their faith in me persisted even when I had serious doubts about myself. I cannot express adequately how lucky I feel to have them all. I also feel fortunate that in these more than

three years I could spend meaningful time with my nieces. I hope that they observed in their uncle not only the difficulties but, more importantly, the immense joys *fī ṭalab al-‘ilm*.

Introduction

As its title suggests, this dissertation is on al-Fārābī's views on unity and focuses on his *Kitāb al-Wāḥid wa-l-Waḥda* (*Book of the One and Unity*) (henceforth *KW*).¹ Al-Fārābī's discussion of the senses of unity and multiplicity in *KW* has its origin primarily in Aristotle's discussion of unity and multiplicity in *Metaphysics* Δ.6, but there are three major differences between al-Fārābī's discussion of unity and multiplicity in his *KW*, and Aristotle's corresponding discussion in the *Metaphysics*.² First, al-Fārābī's account of unity in number is different from Aristotle's account; unlike Aristotle, al-Fārābī explicitly distinguishes the senses of unity used in many-place contexts and those used in one-place contexts. For example, when we say that the point is one because it is not quantitatively divided, we use "one" in a one-place context, signifying a property of the point; on the other hand, when we say that Zayd and 'Amr are one in species because they have the same species, we use "one" in a many-place context, signifying a relation between Zayd and 'Amr. Al-Fārābī articulates his idea of unity in number so that it grounds all the senses of unity used in many-place contexts. Second, Aristotle argues for a strong correspondence between being and unity in *Met.* Γ.2 (minimally coextensiveness but I argue that it is stronger than this relation). There is also a version of this argument in *Met.* Iota 2. A reasonable reading of *Met.* Iota 2 presented in this dissertation suggests that Aristotle seems to identify the sense of unity presumed in the being-unity argument to be the sense of unity *qua* the first measure of a genus, according to a particular understanding of measure specified below.³

¹ Al-Fārābī, *Kitāb al-Wāḥid wa-l-Waḥda* (*Book of the One and Unity*), ed. Muhsin Mahdi (Casablanca: Les Editions Toubkal, 1989) and Al-Fārābī, *Al-Farabi, l'uno e l'unità*, ed. and trans. Cecilia Martini Bonadeo et al. (Pisa: Pisa University Press, 2023).

Two extensive papers by Stephen Menn frame the guiding research questions for this dissertation and provide the fundamental insights for its conception: "Al-Fārābī's Kitāb al-Hurūf and His Analysis of the Senses of Being," *Arabic Sciences and Philosophy* 18, no. 1 (2008): 59–98; "Fārābī in the Reception of Avicenna's Metaphysics: Averroes against Avicenna on Being and Unity," in *The Arabic, Hebrew and Latin Reception of Avicenna's Metaphysics*, ed. Dag Nikolaus Hasse and Amos Bertolacci (Berlin: De Gruyter, 2012), 51–96. More recently, Damien Janos published an article which surveys the content of *KW* and makes useful remarks on the parallels between *KW* and some other works by al-Fārābī and by some earlier philosophers: "Al-Fārābī's (d. 950) On the One and Oneness: Some Preliminary Remarks on Its Structure, Contents, and Theological Implications," in *The Oxford Handbook of Islamic Philosophy*, ed. Khaled El-Rouayheb and Sabine Schmidtke (New York, NY: Oxford University Press, 2017), 101–28.

² Although I do not see any persuasive reason to assume that al-Fārābī did not read and think about Aristotle's discussion of unity and multiplicity in *Metaphysics* Iota, the aspects of the Iota treatment of the topic which differ in content or emphasis from its treatment in Δ.6 are not explicitly addressed in al-Fārābī's discussions in *KW*. Nonetheless, I spell out aspects of al-Fārābī's implicit engagement with some peculiarities of the discussion of unity in *Met.* Iota in Chapter 3.

³ I present my interpretation of this argument in *Met.* Γ.2 and Iota 2 below in Chapter 3 Section 3.

The sense of unity *qua* the first measure of a genus is not explicitly discussed in *KW*. Instead, al-Fārābī develops his sense of unity by virtue of circumscription by a quiddity (*inḥiyāz bi-māhiyya^{tin} mā*) as the sense of unity that corresponds to the relevant sense of being, which is, for al-Fārābī, the sense of being by virtue of circumscription by an extramental quiddity, as articulated in al-Fārābī’ *Kitāb al-Ḥurūf* (*Book of Letters*) (henceforth *KH*).⁴ Roughly speaking, that X is circumscribed (*munḥāz*) by its extremity (*nihāya*), or place (*makān*), or quiddity means that X and only X ‘has’⁵ X’s extremity, or place, or quiddity so that its extremity, place, or quiddity separates it from everything else in the relevant class and renders it one thing in contradistinction with the others. The senses of unity by virtue of circumscription and the sense of being by virtue of circumscription by an extramental quiddity are al-Fārābī’s own innovations, although in a number of passages in works by late antique Greek philosophers (mostly in Aristotle commentaries) al-Fārābī could find starting-points to articulate his ideas of circumscription or confirmations of these ideas. The third major difference between the discussion of unity and multiplicity in *KW* and in Aristotle’s *Metaphysics* is al-Fārābī’s extensive discussion of multiplicity starting in the second part of *KW*. Aristotle briefly mentions some senses of multiplicity at the end of *Met.* Δ.6, and makes some remarks in Iota 3 and 5-6, but he does not exhibit a comparably systematic interest in spelling out all the senses of multiplicity and exploring the logical relations between the senses of multiplicity and the senses of unity.

This dissertation has three chapters. Chapters 2 and 3 address the first two of the three major differences between al-Fārābī’s account of unity and multiplicity and Aristotle’s account in the *Metaphysics* outlined above. To put it extremely briefly, the second chapter addresses the sense of unity in number, and the third chapter addresses the senses of unity by virtue of circumscription. The third major difference outlined above is interesting, and shows, in particular, al-Fārābī’s engagement with al-Kindī, but due to the limitation of time, I will not be able to discuss this issue in the present dissertation. Instead, I plan to discuss it in another work. These two chapters addressing two major differences between al-Fārābī’s *KW* and Aristotle are preceded by the first chapter in which I place al-Fārābī’s *KW* in the context of his other metaphysical works according to his understanding of the subject-matter of metaphysics as a

⁴ Al-Fārābī, *Kitāb al-Ḥurūf* (*Book of Letters*), ed. Muhsin Mahdi (Beirut: Dar El-Machreq Publishers, 1990).

⁵ I use the single quotation marks (‘,’) for scare quotes. More on my use of the quotation marks, see Section 1 below.

science. As will become clearer, al-Fārābī thinks that metaphysics has two *main* parts: ontology and theology. The ontology part studies being and unity, their opposites, their kinds, and their *per se* attributes. The theology part studies the supra-natural principles of beings and ultimately the highest principle among these: God. Al-Fārābī’s *KH* and *KW* present (part of) his views in the ontology part of metaphysics; his *Mabādi’ Ārā’ Ahl al-Madīna al-Fāḍila* (*The Principles of the Views of the Inhabitants of the Virtuous City*) (henceforth *MF*)⁶ and *Kitāb al-Siyāsa al-Madaniyya al-Mulaqqab bi-Mabādi’ al-Mawjūdāt* (*The Political Regime Also Known as the Principles of the Existents*) (henceforth *SM*)⁷ contain a curtailed version of his views in the theology part of metaphysics.

The present introduction chapter has two sections. In the first section, I briefly explain what I mean when I talk about the *senses* of unity in this dissertation, or at least I anchor the talk of the “senses” of unity or the equivalent terms in the primary texts. The second section is about the reference protocols in this dissertation and provides essential information about the manuscripts of *KW* consulted and the primary sources frequently used in the dissertation.

Section 1: “Senses” of unity

By the “senses” of unity (or multiplicity, for that matter), I do not mean anything more robust than what Aristotle means when he says, “‘one’... is said in many ways [*to hen... legetai pollachōs*]” at the beginning of *Met.* Iota 1 (1052a15) or what al-Fārābī means when he says, following Aristotle, “‘one’ is said in many ways [*al-wāḥid yuqālu ‘alā anḥā’ kathīra*]” at the beginning of *KW* 1 36.8 = 40.5.⁸ Aristotle and al-Fārābī go on to distinguish these different “ways” in which “one” is said. Broadly speaking, I call each of these distinct “ways” in which “one” is said a distinct sense of unity. I also talk about a particular way in which “one” is said. It is not my concern here to examine whether we can make useful and coherent distinctions

⁶ Al-Fārābī, *Al-Farabi on the Perfect State: Abū Naṣr al-Fārābī’s Mabādi’ Ārā’ Ahl al-Madīna al-Fāḍila*, ed. and trans. Richard Walzer (New York, NY: Oxford University Press, 1985).

⁷ Al-Fārābī, *Kitāb al-Siyāsa al-Madaniyya al-Mulaqqab bi-Mabādi’ al-Mawjūdāt* (*The Political Regime Also Known as the Principles of the Existents*), ed. Fawzī Najjār (Beirut: Imprimerie Catholique, 1964).

⁸ More on how I refer to the passages in *KW*, see Section 2 below.

between the talk of a sense of a term, and a way in which a term is said; I employ these two ways of talking interchangeably.⁹

A short remark on the Greek expression “*to hen*” and the corresponding Arabic expression “*al-wāḥid*” is in order. Such Greek and Arabic phrases with the definite article, e.g., of the form “the X,” can refer to some definite thing which is X (according to the primary function of the definite article as a determiner), but they can also refer to X-ness, i.e., the features that make anything that is X X, or at the very least, they can refer to an arbitrary X-thing while bringing out X-ness.¹⁰ In particular, the substantive use of the neuter adjective with the definite article in Greek can simply refer to X-ness, e.g., “*to agathon*” = goodness.¹¹ Moreover, similar to the use of the quotation marks around an expression in several modern languages, the neuter singular definite article in Ancient Greek can also be used before an expression (including a whole clause) to signal that we are talking about that expression itself.¹² So, “*to hen*” can also refer to the word “*hen*” which corresponds to the word “one” in English. I am not aware of the Arabic definite article’s having such a quotation name creating function, but depending on the context, an ordinary expression like “*al-wāḥid*” can be used as a quotation name for this expression itself (as in English, if the quotation marks are not used for this purpose). If it is important to clarify that the discussion is about an expression rather than what this expression expresses, al-Fārābī usually introduces the expression with a term like “*qawlunā*” or “*lafza*” to clarify that he talks about the expression, not what the expression expresses, but if it is clear from the context that he talks about the expression itself, he simply uses the expression to refer to this expression itself. For example, in a short introductory logical work *Al-Fuṣūl al-Khamsa (Five Sections)*, explaining what a name (*ism*), a verb (*fiʿl*), and a particle (*ḥarf*) are and how they differ from each other, al-Fārābī usually introduces the expressions he gives as examples with “*qawlunā*” or “*lafza*” preceding them: e.g., “this is like our saying ‘he goes’ [*wa-dhālika mithla qawlinā*

⁹ As I explain in detail in Chapter 2, unlike Aristotle, al-Fārābī is interested in explicitly distinguishing the senses of unity that are used in one-place contexts and the senses of unity that are used in many-place contexts. This seems to add a further layer of distinction to Aristotle’s distinction of the “ways in which ‘one’ is said.”

¹⁰ For this “generic” use of the definite article in Greek, see Evert van Emde Boas et al., *The Cambridge Grammar of Classical Greek* (Cambridge: Cambridge University Press, 2019), 28.6; in Arabic, see H. Reckendorf, *Arabische Syntax* (Heidelberg: Carl Winter’s Universitätsbuchhandlung, 1921), 106.8a-d, and Edward William Lane and Stanley Lane-Poole, *Arabic-English Lexicon* (London: Williams and Norgate, 1863), 74a-b (*henceforth* Lane).

¹¹ *The Cambridge Grammar of Classical Greek* 28.24.

¹² *The Cambridge Grammar of Classical Greek* 28.25; for more examples, see “ὁ, ἡ, τό” B.I.5 in Henry George Liddell, Robert Scott, and Henry Stuart Jones, *A Greek-English Lexicon*, 9th ed., 1996, <https://stephanus.tlg.uci.edu/lsg/> (*henceforth* LSJ).

yamshī],” or “just as the expression ‘the white’ denotes... [*ka-mā anna lafẓat^a al-abyaḍⁱ tadullu ‘alā*].” However, if it is clear from the context that he talks about the expression itself, he does not always use such markers: e.g., “similarly, ‘walking’ and ‘moving’ [*ka-dhālika al-mashy^u wa-l-ḥaraka^u*]” (in *al-Manṭiq ‘inda al-Fārābī* v.1 p.69 lines 16, 12, 13).¹³

In short, both for Aristotle and al-Fārābī what “*to hen*” or “*al-wāḥid*” expresses is ambiguous: it can be unity, i.e., the features that make something one according to a sense of “one,” or some definite thing which is one, or the word “one.” Aristotle, and the philosophers in the Aristotelian tradition, like al-Fārābī, have the conceptual tools to distinguish these three cases and explain the differences between them (among others, consider *DI* 1 16a3-8, aspects of Aristotle’s *per se* (*kath’ hauto*) - *per accidens* (*kata sumbebēkos*) distinction, and aspects of his use of the *qua* (*hē(i)*) modifier), but Aristotle and al-Fārābī do not clarify, for the most part, what “*to hen*” or “*al-wāḥid*” refers to in the passages discussed in this dissertation. At any rate, explicitly stating what these expressions refer to might not be very important here because it seems to me that Aristotle and al-Fārābī assume that their audience would recognize that in the context of a metaphysical inquiry, we are primarily interested in the accounts of unity according to each sense of unity, i.e., the accounts that explain the aspects of reality about X by virtue of which we say that X is one according to the relevant sense of one. So, we are not primarily interested in the word “one,” nor are we primarily interested in listing random things that happen to be in the extension of the word “one,” but we are interested in distinguishing and spelling out the different accounts of unity; we are interested in the word “one” insofar as we are interested in distinguishing and spelling out the accounts of unity according to different senses of the word “one,” and our interest in the extension of this word is conditioned by our interest in the senses of this word according to which this word is applied to the things in its extension.¹⁴ Along these

¹³ Al-Fārābī, *Al-Manṭiq ‘inda al-Fārābī (Al-Fārābī’s Logic)*, ed. Rafīq Al-‘Ajam and Mājīd Fakhrī, 4 vols. (Beirut: Dar El-Machreq Publishers, 1985).

¹⁴ In making these loose remarks, I am not assuming any robust theory of sense and reference, be it Fregean or otherwise. I rely on the reader’s intuitive understanding of the difference between (1) an expression, (2) the relevant object or property, or relation, or fact, or some collection of these, i.e., the relevant ‘slice’ of reality this expression picks out, and (3) the sense or meaning of this expression which conditions the way in which this expression picks out what it picks out. So, the expression “the teacher of Aristotle” picks out the historical person Plato, but so does the expression “the author of the *Republic*.” If I am expected to say more about my talk of the “sense” or the “meaning” of an expression on top of its referent, I would say that it is that which is one of the main reasons for the failure in a *salva veritate* substitution test with another expression with the same referent. In any case, I believe that the way I talk about a sense or a meaning of an expression in the rest of this dissertation is compatible with a wide range of the ways in which one can articulate the difference between the senses or meanings of the two expressions I gave as an example above.

lines, it is correct to say that Coriscus is one *qua* a continuous thing and that he is one *qua* undivided as a human being, but when Aristotle talks about the one *qua* a continuous thing and the one *qua* undivided as a human being, he seems to be primarily interested in spelling out the corresponding senses of unity or these different ways in which “one” is said, and the considerations about the extension of “one” in each case is informed by the considerations about the relevant sense of “one.”

I want to add in connection with these that in principle I use the double-quotation marks (“,”) for creating quotation names for expressions, but I do not aim to be fully consistent, because unless I think there is much to be gained from specifying whether I think Aristotle or al-Fārābī talks about the expression itself or what it expresses, I allow myself to reproduce their ambiguous use of words without any explicit sign like the quotation marks which would clearly indicate that we talk about the expression, not what it expresses. By contrast, as I indicated above in Footnote n.5, I use the single quotation marks for scare quotes.

Section 2: Reference protocols, frequently used primary texts, and transliteration:

Until recently, the only published critical edition of *KW* was the one done by Muhsin Mahdi: Al-Fārābī, *Kitāb al-Wāḥid wa-l-Waḥda (Book of the One and Unity)*, ed. Muhsin Mahdi (Casablanca: Les Editions Toubkal, 1989). For the preparation of most of this dissertation, I used Mahdi’s edition and I suggested improvements on it using the three extant mss. of *KW*: MS. Istanbul Ayasofya 3336, MS. Istanbul Ayasofya 4854, and MS. Istanbul Ayasofya 4839.¹⁵ Mahdi argues that the third ms. is a copy of the second one (see Mahdi’s introduction in his edition of *KW*, on p. 29-33). A common reason for my divergences from Mahdi’s text is that some phrases are in all the three manuscripts of *KW* but left out of Mahdi’s text apparently by mistake because they are not recorded in the critical apparatus either.

Robert Wisnovsky and Stephen Menn brought to my attention recently that Cecilia Martini Bonadeo and her team (Sara Abram, Luca Farina, Giovanni Mandolino, and Marianna Zarantonello) prepared a new edition of the Arabic text with an Italian translation of it and a

¹⁵ I wish to thank the Manuscripts Authority of Turkey (Türkiye Yazma Eserler Kurumu) for making digital copies of these mss. available to me.

commentary on it in Italian (*Al-Farabi, l'uno e l'unità*, ed. and trans. Cecilia Martini Bonadeo et al. (Pisa: Pisa University Press, 2023)). For the passages I quote from *KW*, I compared this edition with Mahdi's edition and I noted the variances between these two editions: I adopted the practice of printing the text that I prefer and noting all the variances between it and the editions by Mahdi and by Martini Bonadeo and her team, if there are any, along with the justification for my preferences. Mahdi's sigla for MS. Istanbul Ayasofya 3336, MS. Istanbul Ayasofya 4854, and MS. Istanbul Ayasofya 4839 are ا, ب, and ا ب in that order and the sigla for these mss. in the edition by Martini Bonadeo and her team are A, B, C in that order. I use this latter set of sigla. My English translation of *KW* is provided at the end of the dissertation. It was originally done on the basis of Mahdi's edition, and I improved my translation of a number of passages comparing the readings in Mahdi's edition with the mss. and taking into consideration the recent edition by Martini Bonadeo and her team, but limitations of time prevented me from doing a thorough comparison between both editions against the mss. and update my translation accordingly.

I usually refer to the passages from *KW* by first citing the paragraph, page and line numbers in Mahdi's edition followed by the equal sign and the page and line numbers of the corresponding passage in the edition by Martini Bonadeo and her team. For example, "*KW* 17 51.8-10 = 50.3-5" indicates that I am citing the passage at lines 8-10 on p.51 in paragraph 17 of Mahdi's edition which is the passage at lines 3-5 on p.50 in the edition by Martini Bonadeo and her team. If I cite a whole paragraph in Mahdi's edition, I do not indicate the page and line numbers of this paragraph in Mahdi's edition in addition. So, *KW* 17 = 50.1-6 refers to paragraph 17 in Mahdi's edition as a whole.

The other primary texts by al-Fārābī that are frequently used in this dissertation are his *Kitāb al-Ḥurūf* (*KH*) and various logical works by him. For *KH*, I use Mahdi's edition: *Kitāb al-Ḥurūf* (*Book of Letters*), ed. Muhsin Mahdi (Beirut: Dar El-Machreq Publishers, 1990). I refer to the passages from *KH* by citing the paragraph, page, and line numbers in this edition, but if I cite a whole paragraph, I do not cite the page and line numbers in addition. For al-Fārābī's logical works, by default I use the collection *al-Manṭiq 'inda al-Fārābī* (*Al-Fārābī's Logic*), ed. Rafīq Al-ʿAjam and Mājīd Fakhrī, 4 vols. (Beirut: Dar El-Machreq Publishers, 1985). A typical reference to a passage in this collection would cite the name of al-Fārābī's work and then the

volume number and the page number of the passage. When I rarely use other editions of al-Fārābī's logical works, I explicitly indicate that I do so.

For Ibn al-Nadīm's *Al-Fihrist*, I cite both G. Flügel's and A. F. Sayyid's editions.¹⁶

The Greek texts of Aristotle's works are usually from the standard OCT editions. In particular, for the *Metaphysics* I use Jaeger's edition by default. I sometimes use other editions of the *Metaphysics* too; in that case, I indicate explicitly that I do so. One exception to my rule of using the OCT editions by default is that for *De Anima* I use Aurel Förster's 1912 edition with Klaus Corcilius' improvements on it (published together with Corcilius' German translation).¹⁷ When I cite works of Aristotle which are not covered in the OCT editions, I use Bekker's edition. For Aristotle's works, the standard abbreviations are used. I should add that for the individual books of the *Metaphysics*, I follow the tradition of calling them by their Greek letter names (e.g., "*Met. Δ.6*" refers to chapter 6 in the fifth book of the *Metaphysics*), but to cite individual books in Aristotle's works other than the *Metaphysics*, I follow the common practice in the contemporary scholarship of using Roman numerals. Since *Met. I* can be confused for the first book of the *Metaphysics*, I refer to the tenth book of the *Metaphysics* always fully stating the Greek letter name of the book (e.g., "*Met. Iota 2*" refers to the second chapter of the tenth book of the *Metaphysics*). I happened to code in my memory references to the books of the *Metaphysics* by their traditional Greek letter names, and it feels less instinctive to me when someone refers to the books of the *Metaphysics* by their numerical order. On the assumption that a good number of the readers of this dissertation share that educated instinct, I decided to opt for making an exception in my citations of the books of the *Metaphysics* and using their traditional Greek letter names rather than referring to them by their numerical order. Unless otherwise indicated, for the Arabic translations of the *Metaphysics*, I use the translation preserved in the textus of Averroes' long commentary on the *Metaphysics*: *Tafsīr Mā Ba'da al-Ṭabī'a (Commentary on the Metaphysics)*, ed. Maurice Bouyges, 4 vols. (Beirut: Imprimerie Catholique, 1938).¹⁸ For the medieval Arabic

¹⁶ Ibn al-Nadīm, *Kitāb al-Fihrist*, ed. Gustav Flügel (Leipzig: Verlag von F. C. W. Vogel, 1872). Ibn al-Nadīm, *Kitāb al-Fihrist*, ed. A. F. Sayyid, 2 vols. (London: Al-Furqan Islamic Heritage Foundation, 2009).

¹⁷ Aristotle, *Über die Seele: De Anima: Griechisch - Deutsch: Übersetzt, mit einer Einleitung und Anmerkungen herausgegeben von Klaus Corcilius*, ed. Aurel Förster, trans. Klaus Corcilius (Hamburg: Felix Meiner Verlag, 2017).

¹⁸ For the medieval Arabic translations of the various books of the *Metaphysics*, see Amos Bertolacci, "On the Arabic Translations of Aristotle's *Metaphysics*," *Arabic Sciences and Philosophy* 15 (2005): 241–75. See in particular the table "The Arabic translations of the *Metaphysics* in Averroes' *Tafsīr*" on p.251 and the table "Overall survey of the Arabic translations of the *Metaphysics*" on p.270 for useful summaries of Bertolacci's discussion in

translations of Aristotle's logical works, I use Badawi's edition: Aristotle, *Manṭiq Aristū* (*Aristotle's Logic*), ed. Abdel Rahman Badawi, 3 vols. (Kuwait: Wakālat al-Maṭbū'āt, 1980).

The late antique Greek commentaries are from the standard *Commentaria in Aristotelem Graeca* (CAG) editions. I refer to a passage in the commentaries by citing the page and the line numbers of the passage.¹⁹

The English translations of all the Arabic and the Greek texts are mine. For my own translations, I occasionally consulted the following translations by other scholars. For al-Fārābī's *Kitāb al-Hurūf*, the Turkish translation in *Harfler Kitabı: Kitābu'l-Hurūf*, trans. Ömer Türker (Istanbul: Litera, 2008). For Aristotle's works, the translations contained in *The Complete Works of Aristotle: The Revised Oxford Translation*, ed. Jonathan Barnes, 2 vols. (Princeton, NJ: Princeton University Press, 1995); for the *Metaphysics* in particular, primarily *Metaphysics*, trans. C. D. C. Reeve (Indianapolis, IN: Hackett Publishing Company, 2016). For the late antique Greek commentaries on Aristotle in the CAG series, the translations produced as part of the Ancient Commentators on Aristotle project (founding editor: Richard Sorabji).²⁰

All the other translations of Greek or Arabic works that I occasionally consult will be indicated the first time I cite those works.

For the transliteration of Arabic, I use the IJMES system.²¹ For the occasional names and phrases in Persian (all are in bibliographical information), I use the IJMES transliteration rules for

this paper. The translations contained in the Textus of Averroes' commentary are for the most part by Uṣṭāth. When I cite a medieval Arabic translation of the *Metaphysics*, if it is not indicated otherwise, it is by Uṣṭāth as found in the Textus of Averroes' *Long Commentary on the Metaphysics*.

¹⁹ Full references to the volumes from this series that I cite can be found in the Bibliography.

²⁰ Information about this project and the publications as part of it can be found at <http://www.ancientcommentators.org.uk/>. Full references to the volumes from this series that I cite can be found in the Bibliography.

²¹ Accessible at <https://www.cambridge.org/core/services/aop-file-manager/file/57d83390f6ea5a022234b400/TransChart.pdf>. Since this brief chart does not specify all the relevant rules, let me specify them. Unless a pronominal suffix is attached to them, nouns and adjectives are normally transliterated without the case endings which are usually not marked by letters in Arabic (that is to say, the indefinite accusative ending for triptotes (-an) (not in a construct state) is always transliterated (as an exception, including the instances like أسماء which is transliterated as *asmā'an* and words ending in *tā marbūṭa* like علمة which is transliterated as 'illatan); also the masculine sound plural nominative is transliterated as -ūn, the oblique as -īn (in construct state -ū and -ī); the dual nominative is transliterated as -ān, the oblique as -ayn (in construct state -ā and -ay); the sound feminine plural is always transliterated as -āt). The prepositions are assumed to be lexical units with their case endings and transliterated accordingly fully (so *ba'da*, not *ba'd*). It is worth noting that apart from the situations mentioned above, the case endings for the words in construct state are *not* transliterated. *Tā marbūṭa* is represented in transliteration as unvoiced (so *ṭabī'a* except as the first element of an *iḍāfa*, e.g., *ṭabī'at al-insān*). The third person masculine pronominal suffix is transliterated as -hu / -hi, not as -hū / -hī even when it is to be pronounced

Persian except for the vowels; for the vowels, I use the transliteration system adopted in the *Encyclopaedia Iranica*.²² For the names of modern scholars in Arabic and Persian, if I know the way in which they themselves spell their names in Latin alphabet, I follow that spelling (so Muhsin Mahdi, not Muḥsin Maḥdī). Otherwise, I use the spelling systems indicated above.

long. The conjugation endings for the verbs are *fully* transliterated. Otiose alifs (e.g. يعلموا) and the otiose wāw (عمرو) are not transliterated, but dagger alifs are always transliterated (so it is *dhālika*, not *dhalika*). The modifications in the pronunciation of the ending of a word followed by an elidable alif (*hamzat al-waṣl*) are not reflected in the transliteration; so the auxiliary vowels are not transliterated (it is *hum al-falāsifa*, not *hum(u)...*; also it is *'an al-ṭabī'a* or *min al-ṭabī'a*, not *min(a)...* or *'an(i)...*); also the shortening in the pronunciation of long vowels preceding a *hamzat al-waṣl* is not reflected in transliteration (so it is *fī al-bayt* not *fī...*). The pronunciations of the *hurūf shamsiyya* are not reflected in the transliteration. *Hamzat al-waṣl* is always transliterated unless it is preceded by a particle that is attached to it in Arabic orthography (so it is *ba'da al-ṭabī'a* but *bi-l-ṭabī'a*). The prepositions and particles that are written separately in Arabic orthography are transliterated as separate words but those which are attached in Arabic orthography are connected to the word they are attached to with a dash (-). Nouns and adjectives ending in ى and ٍ are transliterated according to their pronunciation (so it is *ma'nan* for معنى and *qāḍin* for قاضٍ). The transliteration of *fā-* or *wa-* followed by *li-* and a subjunctive or jussive verb is *not* according to the pronunciation (so it is transliterated as *wa-li-ya'lam* (= “and let him do”) not *wa-l-ya'lam* as it would be pronounced). Pausal forms are not observed if they contradict the rules stated above (so it is transliterated as *isman* and *ismuhu* even at the end of a sentence and not *ismā* and *ismuh*). If the normally omitted endings are transliterated, they are put in superscript (along with the *tā marbūṭa* voiced in that case).

²² The *Encyclopaedia Iranica* transliteration rules for Persian are accessible at <https://www.iranicaonline.org/pages/guidelines>. I would prefer to follow the IJMES transliteration rules for Persian entirely for the sake of consistency but the way that the vowels are spelled according to the IJMES system poorly reflects the standard modern Persian pronunciation; so I decided on this hybrid system.

Chapter 1: *KW* and metaphysics according to al-Fārābī

This chapter surveys al-Fārābī's accounts of the subject-matter of the science of metaphysics in various works, and it outlines how al-Fārābī executes or could execute the blueprint for the science of metaphysics laid out in those accounts. It will be shown that according to al-Fārābī, metaphysics has two *main* parts: ontology and theology. This chapter supports the view that al-Fārābī's *KW* and *KH* (especially Part I of *KH*) present a part of his views in the ontology branch of the science of metaphysics, and his *Mabādi' Ārā' Ahl al-Madīna al-Fāḍila* (*The Principles of the Views of the Inhabitants of the Virtuous City*) (*MF*) and *Kitāb al-Siyāsa al-Madaniyya al-Mulaqqab bi-Mabādi' al-Mawjūdāt* (*The Political Regime Also Known as the Principles of the Existents*) (*SM*) contain a curtailed version of his views in the theology branch of the science of metaphysics.²³ In short, of al-Fārābī's extant works, *KW*, *KH*, *MF* and *SM* contain the most

²³ Al-Fārābī's *MF* and *SM* have a lot in common both in content and structure. I will generally present below the ideas that are common to both works but I will also talk about some differences between the corresponding accounts in these two works. When I present the ideas that are common to both, sometimes I cite only *MF* because *MF* tends to have the longer discussions; when I discuss the differences between the corresponding accounts in these two works, I explicitly cite both.

Several points I make below about the subject of metaphysics according to al-Fārābī and how *KW* and *KH* present his views in ontology and *MF* and *SM* present his views in theology are also made in Stephen Menn, "Al-Farabi's Metaphysics," in *Stanford Encyclopedia of Philosophy* (Winter 2021 Edition), accessed April 2, 2024, <https://plato.stanford.edu/entries/al-farabi-metaphysics/>. In what follows, I explicitly discuss or cite from this article only some remarks that I have not made on the basis of my discussion of the textual evidence here, but the reader can easily compare and see all the points that I make below that are already made in Menn, *Al-Farabi's Metaphysics*. I say that these two works contain "curtailed versions" of al-Fārābī's views in metaphysics because as Stephen Menn points out in *Al-Farabi's Metaphysics* Section 4, these works are not devoted exclusively to metaphysics and do not target a specialist philosophy audience as al-Fārābī's works normally do; both works, but especially *MF*, engage with topics discussed in *kalām* texts in the order in which these topics are discussed in *kalām* texts. Both of these works were plausibly written for a non-specialist general Muslim audience, with the purpose of making *falsafa* available out of its traditional Christian or Ismaili audience and of showing that it is superior to *kalām*.

extensive presentations of his mature²⁴ views in the science of metaphysics according to his understanding of this science.²⁵

²⁴ Mature in the sense that these are the views he was still holding towards the end of his life. This is based on the report about the composition of *MF* that we find in Ibn Abī Uṣaybi‘a: “He started to compose this book in Baghdad and took it with him to Syria [*al-Shām*] towards the end of 330 [AH ~ Summer of 942] and completed it in Damascus in 331 [AH ~ Fall of 942 to Summer of 943]. He revised it [*ḥarrarahu*] and then he inspected his copy after the revision, and he established chapters [*abwāb*] in it. Then some people asked him to divide it into parts [*fuṣūl*] which denote the division [*qisma*] of its subjects [*ma‘ānīhi*]; so, he divided it into parts, namely, into six parts in Egypt in 337 [AH ~ Summer of 948 to Summer of 949]” (Ibn Abī Uṣaybi‘a, *A Literary History of Medicine: The ‘Uyūn al-Anbā’ fī Ṭabaqāt al-Aṭibbā’ of Ibn Abī Uṣaybi‘ah*, ed. Emilie Savage-Smith, Simon Swain, and Geert Jan Van Gelder (Leiden: Brill, 2020), 15.1.5). Ibn Abī Uṣaybi‘a reports above that al-Fārābī went to Egypt in 338 (AH ~ Summer of 949 to Summer of 950) and he returned to Damascus in Rajab 339 (AH ~ December 950 to January 951) (15.1.1.2). Ibn Abī Uṣaybi‘a reports apparently from another source that al-Fārābī died in Damascus in Rajab of 339 (15.1.3). That al-Fārābī died in Damascus in Rajab 339 is also reported in al-Mas‘ūdī who was writing in Syria just a few years later (al-Mas‘ūdī, *Kitāb al-Tanbīh wa-l-Ishrāf*, ed. M. J. De Goeje (Leiden: Brill, 1894), 112 lines 9-10; this was brought to my attention by Dimitri Gutas’ article on al-Fārābī in the *Encyclopaedia Iranica*: Dimitri Gutas, “Fārābī,” in *Encyclopaedia Iranica*, accessed August 14, 2024, <https://iranicaonline.org/articles/farabi-i>). So this date for al-Fārābī’s death seems reliable. In any case, it is clear from these reports that he completed the text of *MF* in the last decade of his life, and he was working on formatting it towards the very end of his life. Walzer reports in the introduction to his edition of *MF* (p.20) that this account is found in two of the mss. of *MF* that he inspects (namely, MS. Y (from the thirteenth century), and MS. S (from the seventeenth century, or perhaps even later)). Of course, these mss. could copy the report simply from Ibn Abī Uṣaybi‘a but MS. Y could be contemporaneous with him. Walzer also reports that the two-layered divisions into chapters and parts mentioned in Ibn Abī Uṣaybi‘a’s account “is pre-supposed in the earliest extant MS. (P),” which is from the eleventh century. (This passage in Walzer’s introduction was brought to my attention by Menn, *Al-Farabi’s Metaphysics* n.42). As discussed below, apart from the fact that *KW*, *KH*, and *MF* are metaphysical works or contain metaphysical views, what connects these three works (and the *SM* which is closely related to *MF* as its content and structure reveal) and set them apart from other works by al-Fārābī is that in these four works “circumscription [*inḥiyāz*]” is used in a technical sense to express ideas of unity and being by virtue of circumscription. (“*Munḥāz*” is also used in al-Fārābī’s *Risāla fī al-‘Aql* (*Treatise on the Intellect*), ed. Maurice Bouyges (Beirut: Imprimerie Catholique, 1938), p.14, but it seems to be used in a non-technical sense there, meaning something like “distinct” so I do not think that the use of this term in al-Fārābī’s *On the Intellect* is by itself enough to group this work with the four metaphysical works mentioned above; yet as I discuss in Section 5 below, the account of the separate intellects which are the causes of the heavenly bodies towards the end of *On the Intellect* has strong similarities (and some differences) with the parallel accounts in *MF* and *SM*). This commonality between *KW*, *KH*, and *MF* (and *SM*) has already been observed by Menn and Janos (see next footnote). I discuss the senses of unity by virtue of circumscription and being by virtue of circumscription by a quiddity extensively in Chapter 3. I argue in Chapter 3 that circumscription as a technical idea first arose from al-Fārābī’s reflections on the senses of unity (presented in *KW*), then he used this term to formulate his idea of the corresponding sense of being by virtue of circumscription by a quiddity (presented in *KH*), and the ideas of being and unity by virtue of circumscription by a quiddity are applied to God in *MF* (and *SM*). I do not suggest this as a relative chronological order of the composition of *KW*, *KH*, *MF*, and *SM*, but only to stress that these four works share articulations and applications of a distinctly Farabian idea of *inḥiyāz* and the likely order by which this idea was developed. We do not need to assume that he developed his ideas in exactly the same chronological order in which he completed the works containing those ideas. In fact, if the framing account of al-Fārābī’s *Fī Ahkām al-Nujūm* (*On Astrology*) is reliable, as a habit (‘*ādātu*’), al-Fārābī was recording his thoughts first in notes and then he was compiling those notes into books or treatises (full title: *Fī-Mā Yaṣīḥu wa-Mā lā Yaṣīḥu min Ahkām al-Nujūm* (*On What is Right and What is not Right Concerning Astrology*) in al-Fārābī, *Risālatān Falsafiyatān* (*Two Philosophical Treatises*), ed. Ja‘far Āl Yāsīn (Beirut: Dār al-Manāhil, 1987), 45-65; I also consulted its Turkish translation in Mahmut Kaya, trans., *İslam Filozoflarından Felsefe Metinleri* (*Philosophical Texts from Islamic Philosophers*) (Istanbul: Klasik, 2003), 183-192). *Fī Ahkām al-Nujūm* is introduced by a certain Abū Ishāq Ibrāhīm b. ‘Abd Allah al-Baghdādī (45-8); he reports that he had an active interest in astrology but by time he lost his confidence in astrology’s capacity to deliver the benefits it is said to be capable

This chapter has six sections. In the first section, I discuss al-Fārābī's views on the subject-matter of metaphysics and the parts of metaphysics in his *Fī Aghrāḍ Mā Ba'da al-Ṭabī'a* (*On the Aims of the Metaphysics*).²⁶ In the second section, I present his account of the subject-matter of

of. Then he consulted al-Fārābī on the scientific value of astrology. They conversed for a while and "then one day [al-Fārābī] brought out and showed to me [akhraja ilayya] a piece of writing [juz'an] in his own hand; it had sections [fuṣūṣ] and notes [tadhākīr] as if he would collect them at a time when he is free [li-waqt yatafarraghu lahu], and then he would compile them and make a book or a treatise out of them just as he is wont to [ka-'ādatihi]. So, I copied them... and I wrote this copy of what was in that piece of writing [by al-Fārābī] for you so that you can reflect upon them when you are in the mood for it" (47-8). Right after this, al-Fārābī's account (apparently in this person's edition) starts ("قال أبو نصر...").

²⁵ Various aspects of the close connection between *KW*, *KH*, and *MF* (and *SM*) have already been discussed in Menn's *Al-Fārābī's Kitāb al-Hurūf* and his *Fārābī in the Reception*. I present these observations individually and give references to the exact pages in which they are found in Section 6 below. The account in this chapter builds on those observations. To name just one for now, Menn points out in *Fārābī in the Reception* p.90 n.46 that "[t]he picture that emerges of [MF] as applying Fārābī's technical ontology [developed in *KW* and *KH*] to theology contrasts sharply with Maḥdī's picture (in *Foundation of Islamic Political Philosophy*) of [MF] as an exoteric or 'political' work with a non-serious metaphysics, logically disconnected from the esoteric ontology of [*KH*]. I hope to develop this picture of [MF] in other work." The present chapter does not develop such a picture of *MF* (and *SM*), but it shares and builds on this observation that al-Fārābī presents his ontology in *KW* and *KH*, and this is employed in his theology presented in *MF* (and *SM*). For a brief version of this picture developed by Menn, see Menn, *Al-Fārābī's Metaphysics* Section 4. Janos also pointed out the parallel and dependent passages between *KW*, *KH*, and *MF* (and *SM*) that employ or discuss the ideas of unity and being by virtue of circumscription by a quiddity (*inḥiyāz bi-māhiyyatm mā*) in his paper *On the One and Oneness* (see, especially, p.104-105, 116-121).

My views on Aristotle's *Metaphysics*, some of which are presented here, are heavily informed by Menn's lectures, seminars, and my personal conversations with him about the *Metaphysics*. The draft of his excellent work on the *Metaphysics* called *The Aim and the Argument of Aristotle's Metaphysics*, many parts of which I am yet to digest, can be found at <https://www.philosophie.hu-berlin.de/de/lehrbereiche/antike/mitarbeiter/menn/contents>. I could not do a thorough comparison to report the differences there might be between his views that I otherwise likely draw on and the views I present here. Needless to say, I am solely responsible for the merits or the shortcomings of these differences. I should add that my presentation of some of Aristotle's passages below glosses over several interpretive controversies about those passages without fully acknowledging them. My purpose here is primarily to present how al-Fārābī understood Aristotle, but to make better sense of what al-Fārābī confronted in Aristotle and how he might have adapted or right away altered or misunderstood what he found in Aristotle, I try to present a reasonable interpretation of the relevant passages in Aristotle with the textual evidence as a reference point to compare Aristotle with al-Fārābī's Aristotle.

²⁶ The full title as mentioned at the beginning of the treatise in Dieterici's edition is *On the Aims of the Philosopher in All the Books of (his) Work Named After Letters, i.e., the Verification of Aristotle's Aim in his Work Metaphysics (Fī aghrāḍ al-hakīm fī kull maqāla min al-kitāb al-mawsūm bi-l-hurūf wa-huwa taḥqīq gharāḍ Aristūṭālīs fī kitāb mā ba'da al-ṭabī'a)* in *Alfārābī's Philosophische Abhandlungen (Al-Fārābī's Philosophical Treatises)*, ed. Friedrich Dieterici (Leiden: Brill, 1890), 34-38. Since Dieterici's edition is widely used in the scholarship, I will give references to his edition but I will update it with a recent critical edition of this work undertaken by Leila Kiankhah in "Taḥqīq va-Taṣḥīḥ-e Enteqādi-e Resāle 'Fī Aghrāḍ Mā Ba'da al-Ṭabī'a' (The Investigation and the Critical Edition of the Treatise 'On the Aims of the Metaphysics')," ed. Leila Kiankhah, *Jāvidān Kherad*, no. 26 (1393 [2014-2015]): 119-57. In the passages from *On the Aims* quoted below, I mostly follow the different readings that Kiankhah proposes and indicate the differences between her readings and Dieterici's in footnotes. Rarely, I do not accept her readings (in those cases, I indicate this and explain why I do not accept her readings). Kiankhah consults five mss. (described on p.138-140), as well as the two prior editions of the treatise (one by Dieterici, and another edition published in Hyderabad in 1930). I would like to thank Stephen Menn for bringing this edition to my attention.

As Kiankhah notes on p.147 n.1 this title or something very similar to it is found in some of the mss. she consults and also in the Hyderabad edition.

metaphysics in his *Ihṣā' al-'Ulūm (Enumeration of the Sciences)*²⁷ with a special focus on elaborating on what I call the groundwork part of metaphysics; this part of metaphysics contains the dialectical exposition and defense of the principles of the particular sciences. In the third section, I present al-Fārābī's account of the subject-matter of metaphysics in his *Kitāb al-Burhān (the Book of Demonstration)*²⁸ and I start to spell out the relation between metaphysics and the other sciences as part of an all-encompassing demonstrative system. In the relatively short fourth section, I summarize al-Fārābī's accounts of the subject-matter of metaphysics which virtually reduce metaphysics as a whole to the theology part of it. These short accounts closely follow the relevant considerations in the late antique Greek introduction to philosophy and introduction to Aristotle's philosophy literature prefixed to the commentaries on the *Isagoge* and the *Categories* respectively. In the fifth section, I continue to elaborate on the relation between metaphysics and the other sciences in an all-encompassing demonstrative system in *Kitāb Tahṣīl al-Sa'āda (The Attainment of Happiness)*²⁹ and *Falsafat Aristūṭālīs (Philosophy of Aristotle)*³⁰; in this section, I also outline the main features of how al-Fārābī *does* execute some aspects of the theology part in *MF*, and *SM*, and how he *could* execute other aspects of the theology part based on his relevant claims in these works and in *Risāla fī al-'Aql (Treatise on the Intellect)*. In the sixth and the final section, my chief aim is to outline the main features of how al-Fārābī executes the ontology part in *KW* and *KH*, especially in its first part; I also briefly discuss the account of the subject-matter of metaphysics towards the beginning of *KH* and how it compares with what he actually does in his discussions of ontological topics in *KH*. Finally, I conclude with an overview of the chapter and with remarks on how the ontology part can be viewed as serving the theology part in metaphysics understood as a demonstrative science.

²⁷ Al-Fārābī, *Ihṣā' al-'Ulūm (Enumeration of the Sciences)*, ed. 'Alī Bū Mulḥim (Beirut: Dār wa-Maktabat al-Hilāl, 1996).

²⁸ *Al-Manṭiq 'inda al-Fārābī*, v.4, p.17-96.

²⁹ *Kitāb Tahṣīl al-Sa'āda (The Attainment of Happiness)* in Al-Fārābī, *Al-A'māl al-Falsafiyya (Philosophical Works)*, ed. Ja'far Āl Yāsīn (Beirut: Dār al-Manāhil, 1992), 119-197.

³⁰ *Falsafat Aristūṭālīs (Philosophy of Aristotle)*, ed. Muhsin Mahdi (Beirut: Dār Majallat Shi'r, 1961).

Section 1: The subject-matter of the science of metaphysics in *On the Aims*

In *On the Aims*, al-Fārābī provides both a presentation of the overall aim (*skopos* - *gharaḍ*)³¹ of Aristotle's work *Metaphysics*, and hence the science developed in this work, and the aims of each book of the *Metaphysics*.³² The account of the overall aim of the *Metaphysics* in this treatise has *Met.* Γ.1-2 and E.1 as its ultimate sources.³³ Al-Fārābī divides sciences into the particular and the universal sciences. A particular science like natural science (*ilm al-ṭabī'a*) or geometry (*al-handasa*) studies a particular subset of beings. For example, natural science has bodies as its

³¹ The late antique commentaries on Aristotle's *Categories* are prefaced by an introduction to Aristotle's philosophy which contains answers to ten questions. The last question contains a list of further preliminary questions that one should answer before studying a particular philosophical work, which are typically six in number: these questions are about this work's aim (*skopos*), its usefulness (*chrēsimon*), its title (*epigraphē*), its authenticity (*gnēsimon*), its rank (*taxis*) (i.e., the place of this work in the reading order of the philosophical works), and its division into parts (*diairesis eis ta moria*) (i.e., the major parts of this work). At the beginning of the *Categories* commentary by Elias (David), it is stated that it is Proclus who arranged these ten questions ("*suntagma de toutou Prokleion*") (107.24-6). For a useful overview of how these ten questions are presented in the extant late antique Greek commentaries on the *Categories*, see L. G. Westerink, "The Alexandrian Commentators and Their Introductions to Their Commentaries," in *Aristotle Transformed: The Ancient Commentators and Their Influence* (Ithaca, NY: Cornell University Press, 1990), 342-3. The topics that need to be discussed before a particular philosophical work are discussed in the proper introductions to the philosophical works commented on in this tradition but sometimes a few of the six topics in this list are left out of the discussion and sometimes a few additional topics are added (for example, David has eight in his proper introduction to the *Isagoge*; in addition to the six mentioned, he discusses the way of teaching this work (*didaskalikos tropos*), and under which part of philosophy it is referred (*hupo ti meros anaphora*) (i.e., the *Isagoge* is put under logic) (the initial list at 80.11-14, the discussion of the two additional topics: 93.25-94.10). Also, Ammonius mentions at the beginning of his commentary on *DI* that he will discuss only five of the six topics, with *skopos* being called "purpose [*prothesis*]," and he says that the usefulness (*chrēsimon*) of this work does not require a separate discussion because it will become clear from the discussion of its purpose (1.12-20)). For a comprehensive survey of the Arabic reception of the introduction to Aristotle's philosophy literature as well as of the introduction to philosophy literature prefixed to the late antique Greek commentaries on the *Isagoge* that I will mention below, see Christel Hein, *Definition und Einteilung der Philosophie: Von der spätantiken Einleitungsliteratur zur arabischen Enzyklopädie* (Frankfurt: Peter Lang, 1985). In particular, for al-Fārābī's discussion of the topics that need to be discussed before a work, see *Al-Alfāz al-Musta'mala fī al-Manṭiq* (*Expressions Used in Logic*), ed. Muhsin Mahdī (Beirut: Dar El-Machreq Publishers, 1968), 94-5, and *Fī-Mā Yanbaghī An Yuqaddama Qabla Ta'allum al-Falsafa* (*On What Ought to Precede the Learning of Philosophy*), 54-5 in *Alfārābī's Philosophische Abhandlungen* (*Al-Fārābī's Philosophical Treatises*), ed. Friedrich Dieterici (Leiden: Brill, 1890), 49-55. For a study, edition, and translation of a treatise by Yaḥyā ibn 'Adī in which he discusses these preliminary topics, see Robert Wisnovsky, "Yaḥyā b. 'Adī's Discussion of the Prolegomena to the Study of a Philosophical Text," in *Law and Tradition in Classical Islamic Thought: Studies in Honor of Professor Hossein Modarressi* (New York, NY: Palgrave Macmillan, 2013), 187-201; in particular, see n.4 on p.199 for the secondary literature on these accounts in the ancient and the medieval traditions.

As Bertolacci points out, al-Fārābī's *On the Aims of the Metaphysics* discusses not only its aim, but also its title and its division into parts (*The Reception of Aristotle's Metaphysics in Avicenna's Kitāb al-Šifā': A Milestone of Western Metaphysical Thought* (Leiden: Brill, 2006), 77).

³² I occasionally consulted Bertolacci's translation of *On the Aims* in his *The Reception of Aristotle's Metaphysics*, 66-72.

³³ I will not trace here every claim in *On the Aims* that I discuss back to the passages in the *Metaphysics* which lie in their background; I will only talk in detail about those passages in the *Metaphysics* whose connections to the claims in al-Fārābī require a clear discussion. For a brief explanation of how *Met.* Γ.1-2 informed al-Fārābī's account of the ontology part of metaphysics in *On the Aims*, see below Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ.

subject-matter and studies their motion and rest as well as their principles (*mabda'*, pl. *mabādi'*) and the *per se* attributes (*lāḥiqa*, pl. *lawāḥiq*) (34.21-35.6). The science that is studied in Aristotle's *Metaphysics* is the universal science. In contrast with the particular sciences,

T1 *On the Aims* 35.8-12

وأما العلم الكلي فهو الذي ينظر في الشيء العام لجميع الموجودات مثل الوجود والوحدة وفي أنواعه ولواحقه وفي الأشياء التي لا تعرض بالتخصيص لشيء شيء من موضوعات العلوم الجزئية مثل التقدم والتأخر والقوة والفعل والتام والناقص وما يجري مجرى هذه وفي المبدأ المشترك لجميع الموجودات وهو الشيء الذي ينبغي أن يسمى باسم الله³⁴

the universal science investigates [1.a] the thing which is common [‘āmm] to all the beings [mawjūdāt] like being [wujūd] and unity [waḥda] and [1.b] [it investigates] its kinds [anwā’ihī] and [1.c] its *per se* attributes [lawāḥiqihī], and [1.d] the things which are not attributed [lā ta’riḍu] to each and every one of the subjects of the particular sciences specifically [bi-l-takḥṣīs], like priority, posteriority, potentiality, actuality, the perfect, the deficient, and whatever is in this way, and [2] [it investigates] the principle shared [mushtarak] by all the beings, i.e., the thing which should be called by the name of God.

What the universal science studies can be divided into two. On the one hand, it studies (1.a) “the thing which is common to all beings like being and unity,” (1.b) “its kinds,” (1.c) “its *per se* attributes,” and (1.d) the attributes like priority and posteriority which are not specifically comprehended by any particular science.³⁵ Although al-Fārābī does not give a proper name to this part of the universal science, following the tradition, let’s call this part ontology. On the other hand, the universal science studies (2) the principle of all beings, i.e., God. Following the tradition, al-Fārābī himself calls this part of the universal science theology (*al-‘ilm al-ilāhī*).

Before I move on with the discussion of the subject-matter of the universal science, I want to point out that we are justified in using the singular “the universal science,” because as al-Fārābī argues at 35.13-16, there can only be a single universal science: if we assume that there are two universal sciences, each of them would have a subject-matter proper to it and distinct from the subject-matter of the other universal science; in that case, however, the subject-matter of either of

³⁴ Dieterici: + جَلَّ جلاله.

³⁵ As Stephen Menn points out in *Al-Farabi's Metaphysics* Section 2, these contrary attributes like perfect and deficient disjunctively apply to all beings.

the two would fail to comprehend all beings, and so both of the presumed universal sciences would be particular sciences.³⁶

At 35.16-36.9, al-Fārābī presents his version of *Met.* E.1 1025b18-6a23, and further comments on the subject-matter of the universal science. In this passage, al-Fārābī argues that this science is different from natural science (*‘ilm al-ṭabī‘a*) and mathematics (*‘ilm al-ta‘ālīm*), and he argues that theology is a *proper part* (*qism*) of the universal science. Al-Fārābī’s emphasis that theology is a *proper part* of the universal science is a curious addition to Aristotle’s account in E.1 which serves as al-Fārābī’s ultimate source here. Aristotle seems to suggest there that the science which is developed in his work *Metaphysics* as a *whole* is called *theologikē*. Aristotle argues earlier in the *Metaphysics* that this science, which he often calls wisdom (*sophia*) or first philosophy (*prōtē philosophia*), is a theoretical (*theōrētikē*) science and not a practical (*praktikē*) or productive (*poiētikē*) one (see *Met.* A.1-2, α.1 993b19-3). In the *Met.* E.1 1025b18-6a18 argument, Aristotle assumes that the science under consideration is a theoretical science. After arguing that this science is neither natural science nor mathematics, but it studies “separate and immovable things” which are the “causes for the visible divine things [*tois phanerois tōn theiōn*]³⁷” at 1025b18-6a18, Aristotle concludes, “so there would be three theoretical philosophies: mathematics, natural science, and *theologikē*” and that what is divine (*to theion*) belongs in “this sort of nature,” i.e., the separate and immovable things (1026a18-21). So, by elimination, the science under consideration must be *theologikē*. It is true that Aristotle goes on to argue that this science is also universal and studies being *qua* being and its *per se* attributes (1026a23-32). The

³⁶ Al-Fārābī seems to overstate his case: for his argument to work, he does not need to infer that both of the presumed universal sciences would turn out to be particular sciences. It seems to be compatible with al-Fārābī’s main premise that one of the presumed universal sciences has all the beings as its subject-matter, but the other presumed universal science has only some beings as its subject-matter (as is the case with the single universal science and any particular science (say, mathematics) according to al-Fārābī’s view). In this case, both of the presumed universal sciences would have different subject-matters, and the second presumed universal science would be shown to be a particular science; so, we would be left with only a single universal science.

As I mention below, in the *Book of Demonstration*, al-Fārābī asserts, in contrast with this argument for the existence of a single universal science, that there are three universal arts: metaphysics, dialectic, and sophistic, all of which have the general predicates like being and unity as their subject-matters, but they differ from each other in other respects.

³⁷ I.e., the heavenly bodies. Plato too uses a similar designation for the heavenly bodies in *Timaeus* 39e-40d. In particular, he speaks of the “heavenly genus of gods [*ouranion theōn genos*]” in 39e referring to (some or all of) the heavenly bodies and he concludes this account by saying that “let this be the end of what we say about the nature of the visible and generated gods [*theōn horatōn kai gennētōn*]” (40d). This passage from the *Timaeus* was brought to my attention by Peter Adamson, “One of a Kind: Plotinus and Porphyry on Unique Instantiation,” in *Universals in Ancient Philosophy* (Pisa: Edizioni della Normale, 2013), 329–51, 341. This article can also be found in Peter Adamson, *Studies on Plotinus and Al-Kindī* (London: Routledge, 2016).

reason for this seems to be that the science under consideration studies the “principles and causes” of beings *qua* being, as Aristotle states at the beginning of *Met.* E.1;³⁸ for this purpose, we should familiarize ourselves with being *qua* being and its *per se* attributes so as to discover finally the ultimate principles of all beings *not* insofar as they are considered in respect of their particular natures but insofar as they are beings. These ultimate principles, or at least some of them, will turn out to be separate and immovable things which deserve to be called divine (*theion*) in some sense, and therefore this science can be called theology. As we will see below, al-Fārābī himself also uses the term “*al-‘ilm al-ilāhī*” to refer to the science under consideration as a whole in some other works,³⁹ and this would be justified given that Aristotle himself seems to be calling this science theology as a whole, and as I discuss in greater detail below, the late antique Greek introduction to philosophy and introduction to Aristotle’s philosophy literature follow this practice of calling the science under consideration theology.⁴⁰ After all, if the view I sketched out above is correct, it is more proper to call this science theology than ontology, because the study of the *per se* attributes of being is for the purpose of the study of the highest principles and causes of beings insofar as they are considered as beings. However, as I mentioned already, in *On the Aims*, al-Fārābī emphasizes that *al-‘ilm al-ilāhī* is a *proper part* of the universal science:

T2 *On the Aims* 35.16-20

³⁸ See also Γ.1, which starts by contrasting the science which “investigates [*theōrei*] being *qua* being and its *per se* attributes” with the particular sciences like mathematics and builds up a condensed argument to support the claim that “we must grasp the primary causes of being *qua* being” (1003a31-2). Aristotle already identified the science under consideration as the theoretical science of the ultimate causes and principles of beings earlier in the *Metaphysics*. The conclusion of the argument of A.1-2 about the qualities of this science is that it is “a theoretical [science] of the primary principles and causes” (982b9-10). Also compare *Met.* α.1 993b19-31.

³⁹ For example, see T10 in Section 4 below. When al-Fārābī uses “*al-‘ilm al-ilāhī*” to refer to the science under consideration as a whole, I will translate it as divine science just to mark clearly that the term is used broadly.

⁴⁰ As I mentioned in Footnote n.31 above, late antique Greek commentators in the Ammonius school attach an introduction to Aristotle’s philosophy account to the beginning of their commentaries on the *Categories*. One of the topics discussed in this account is the division of Aristotle’s works. As we see in greater detail in Section 4 below, they divide Aristotle’s theoretical works into three: works in natural science, in mathematics, and in theology. Also, the same group of Greek commentators attach a general introduction to philosophy account to the beginning of their commentaries on the *Isagoge*. In this account, they would discuss the definitions of philosophy and the parts of philosophy. Philosophy is divided into a theoretical and a practical part. The theoretical part is further divided into three: natural science, mathematics, and theology.

و⁴¹ ينبغي أن يكون العلم الإلهي داخلا في هذا العلم لأن الله مبدأ للموجود المطلق لا لموجود دون موجود فالقسم الذي يشتمل منه على إعطاء مبدأ الوجود⁴² ينبغي أن يكون هو العلم الإلهي

Theology should fall under this science because God is the principle of being simpliciter [*al-mawjūd al-muṭlaq*], not of a [particular] being with the exclusion of [another] being; so, the part [*qism*] of it which comprehends the presentation [*i ṭā*] of the principle of being [*wujūd*] should be theology.

Al-Fārābī's emphasis on calling theology a *part* of the universal science seems to be primarily due to the dialectical setting of *On the Aims*. As he states at the beginning of this treatise, he writes this treatise because his audience is confused and misled about the aim of Aristotle's *Metaphysics* because “many people hastily jump to the wrong belief [*kathīr min al-nās yasbiqū⁴³ ilā wahmihim*] that the import [*faḥwā*] of this work [sc. the *Metaphysics*] and its content [*maḍmūn*] is an account of the Creator,⁴⁴ the intellect, the soul, and other similar things, and that the science of metaphysics [*ilm mā ba'da al-ṭabī'a*, i.e., the universal science⁴⁵] and the science of divine unity [*ilm al-tawḥīd*, or knowledge of divine unity] are one and the same in number⁴⁶,” al-Fārābī adds that of all the books of the *Metaphysics*, only Λ is devoted to the discussion of this topic (34.6-13).⁴⁷ I will say more below about the fact that according to al-Fārābī's own understanding, *Met. A* deals with the theology part of the universal science, but even here we can see that the part of the universal science which studies “the Creator” and apparently other ‘divine’ things like the intellect, the soul etc., the part which can be considered to contain the science or knowledge of “divine unity [*tawḥīd*]” could only be theology as the theology part of the universal science alone studies God specifically (and as we will see other ‘divine’ things too). So, it seems that already in this passage al-Fārābī suggests that *Met. A* presents the theology part of the universal science. It also seems in this passage that al-Fārābī identifies what these “many people” take to be the *whole* science of metaphysics as a *proper part* of this science, namely theology. If so, it makes sense for him to emphasize that theology is a *proper part* of the

⁴¹ Dieterici: ف.

⁴² Dieterici: الموجود.

⁴³ Dieterici: سبق. For the sense of سبق إلى as I translate it, see Lane 1299b.

⁴⁴ Dieterici: سبحانه وتعالى +.

⁴⁵ See below for al-Fārābī's explanation of why the universal science is also called the science of metaphysics.

⁴⁶ Dieterici: - بالعدد

⁴⁷ Bertolacci suggests that al-Fārābī targets here al-Kindī and his followers (*The Reception of Aristotle's Metaphysics*, 72-3).

universal science, while Aristotle's work *Metaphysics* and the science of metaphysics deal with the *whole* universal science, and the people al-Fārābī criticizes in effect mistake the part for the whole.⁴⁸

Having explained why al-Fārābī emphasizes that theology is a proper part of the science developed in the *Metaphysics*, let me go back to the discussion of the subject-matters of each part of the universal science. As we saw in T1 (2), the theology part of the universal science studies “the principle [*mabda*'] shared by all the beings” i.e., God. Here, “principle” is used in the singular. Also, in T2, when al-Fārābī talks about what theology studies, he mentions that it studies God which is “the principle of being simpliciter” and that theology presents “the principle of being.” The “principle” is used in the singular in both cases. We know from *Metaphysics* Λ that there is only a single ultimate principle of everything, i.e., the first unmoved mover;⁴⁹ al-Fārābī's God is different from the first unmoved mover of *Met.* Λ,⁵⁰ but al-Fārābī presents his own argument for the uniqueness of the first cause (*al-sabab al-awwal*), i.e., God in *MF*.⁵¹ So it is appropriate for al-Fārābī to use “the principle shared by all the beings” in the

⁴⁸ In the accounts of the aims of the individual books of the *Metaphysics* towards the end of *On the Aims*, al-Fārābī presents his account of the aim of *Met.* E too, and there al-Fārābī repeats that theology is a part of the universal science, but he adds that theology is also this science “in a way:” “[*Met.* E] comprehends the elucidation [*ibāna*] of the essential differences among the theoretical sciences which are natural science, mathematics, and theology, and that they are [these] three only, and [it comprehends] the explanation [*ta'rīf*] of this case about theology [*amr al-'ilm al-ilāhī*] that it falls under this science [sc. the universal science]; actually [*bal*] it is this science in a way [*bi-wajh mā*]” (37.9-11). Presumably this claim refers to the argument towards the end of E.1 that theology is also the universal science studying being *qua* being as a whole (at 1026a23-32), about which I briefly talked above. This point is also made by Bertolacci in *The Reception of Aristotle's Metaphysics*, 76 n.16. (In the quoted passage, Kiankhah has “*al-ṭabī'ī wa-l-riyāḍī wa-l-ilāhī*” instead of Dieterici's “*al-ṭabī'iyya wa-l-riyāḍiyya wa-l-ilāhiyya*” (37.10). More importantly for the meaning of the passage that follows the passage quoted above, Kiankhah corrects Dieterici's “*fa-inna*” at the end of line 11 into “*wa-inna*,” according to Kiankhah's apparatus, none of the mss. she consults nor the Hyderabad edition has “*fa-inna*.” “*Wa-inna*” makes a better sense than “*fa-inna*” because the following passage is not an explanation of or a justification for the preceding passage).

⁴⁹ *Met.* Λ.8 1074a31-8, Λ.10 1075b37-6a4.

⁵⁰ Perhaps the biggest difference is that al-Fārābī's God is distinct from and is above all the movers of the heavens, including the mover of the first heaven, and al-Fārābī's God is not a cause of motion but a cause of being for everything else (some immediately, others through the mediation of the intermediates). More on al-Fārābī's views on the relations between God, and the other immaterial substances studied in the theology part of metaphysics, see Section 5 below.

⁵¹ Al-Fārābī presents two arguments for the uniqueness of the first cause in *MF* Ch.1 2 (also see *SM* p.43 for these arguments). The first argument turns on its simplicity, and the second argument turns on its perfection. For an analysis of these arguments, see Menn, *Al-Farabi's Metaphysics* Section 4. The *immediate* source for the *MF* argument for the uniqueness of the first cause turning on its simplicity (i.e., that something which is not simple is caused and if there were two first causes, at least one of them would not be simple because being a first cause would be an essential feature shared by both, and at least one of them would have another essential feature distinguishing it from the other), which is different from the *Met.* Λ arguments for the uniqueness of the first unmoved mover mentioned in Footnote n.50 above, seems to be al-Kindī: see p.207 lines 4-15 of al-Kindī's *Fī Waḥdāniyyat Allāh wa-Tanāhī Jirm al-'Ālam* (*On the Unity of God and the Limitedness of the Body of the World*) in *Rasā'il al-Kindī al-*

singular referring to God. That said, in his account of the particular aim of *Met. Λ*, in addition to this single principle of all things, al-Fārābī mentions that some “separate [*mufāriqa*] beings” (in the plural) are also studied in *Met. Λ*. As I pointed out above in my discussion of the beginning of *On the Aims*, al-Fārābī seems to be suggesting that the theology part of the science developed in Aristotle’s *Metaphysics* is confined to *Metaphysics Λ*. Indeed, towards the end of *On the Aims*, al-Fārābī states the aims of the individual books (*maqālāt*) of the *Metaphysics*, starting from α and apparently ending in M,⁵² and of these, the subject-matter of the theology part of the universal science could only fit into the stated aim of *Met. Λ*. As al-Fārābī puts it,

T3 *On the Aims* 38.2-4

والمقالة الحادية عشر في مبدأ الجوهر والوجود كله وإثبات هويته وأنه عالم بالذات حق الذات وفي الموجودات
المفارقة التي بعده وفي كيفية ترتيب وجود الموجودات عنه

The eleventh book [i.e., Λ]⁵⁴ is about [1] the principle of substance and of being as a whole [*wa-l-wujūd kullihī*], and the affirmation of its existence [*huwīyyatihī*] and that it

Falsafīyya (Al-Kindī’s Philosophical Treatises), ed. Muḥammad ‘Abd al-Hādī Abū Rīda (Cairo: Dār al-Fikr al-‘Arabī, 1950), 201-207; also compare p.27 lines 11-6 and p.83 lines 7-12 of al-Kindī’s *Fī al-Falsafa al-Ūlā (On First Philosophy)* in *Oeuvres Philosophiques et Scientifiques d’al-Kindī, Volume 2: Métaphysique et Cosmologie*, ed. and trans. Roshdi Rashed and Jean Jolivet, vol. 2, 2 vols. (Leiden: Brill, 1998), 8-99. For al-Kindī’s works, I consulted the following translations: *The Philosophical Works of Al-Kindī*, trans. Peter Adamson and Peter E. Pormann (Karachi: Oxford University Press, 2012), and in particular for *On First Philosophy*, also *Al-Kindī’s Metaphysics: A Translation of Ya ‘qūb ibn Ishāq al-Kindī’s Treatise ‘On First Philosophy’ (Fī al-Falsafah al-Ūlā)*, trans. Alfred L. Ivry (Albany: State University of New York Press, 1974)). I intend to discuss this argument by al-Fārābī for the uniqueness of the first cause turning on simplicity and his sources in a separate study.

⁵² There are some puzzles about how some details in al-Fārābī’s accounts of the subjects of some of the particular books of the *Metaphysics* correspond to what we actually find in those books of the *Metaphysics*. I briefly mention these issues below in Section 2 in and around Footnote n.145.

⁵³ Dieterici: -و.

⁵⁴ In his description of the aims of the individual books of the *Metaphysics* towards the end of *On the Aims*, al-Fārābī describes the aim of the first book (*al-maqāla al-awwal*) as follows: “the first book of this work consists of a preface of a sort [*shibh al-ṣadr*] and a discourse pertaining to the work [as a whole], and [reading *wa* with Kiankhah] an elucidation [*ibāna*] of the fact that each kind of the causes [*aqsām al-‘ilal kullahā*] terminates [reading *yantahī* with Dieterici] at a primary cause” (36.21-2). This description seems to fit the content of *Met. α*, (the “preface of a sort and a discourse pertaining to the work [as a whole]” seems to refer to α.1 and the “elucidation of the fact that each kind of the causes [i.e., the traditional four Aristotelian causes, material, efficient, formal, and final] terminates at a primary cause” seems to refer to α.2). After this, al-Fārābī goes on to discuss the aim of *Met. B*. As Bertolacci points out in *On the Arabic Translations*, parts of *Met. A* was translated into Arabic only in the second half of the tenth century by Naẓīf and this is the translation preserved in Averroes’ *Long Commentary on the Metaphysics*. So, it is unlikely that al-Fārābī had access to *Met. A* in Arabic translation. So, if we discard *Met. A* and start counting from *Met. α* as the first book of the *Metaphysics*, *Met. Λ* would be the eleventh book. In agreement with this, in the passage from the beginning of *On the Aims* I discussed above, al-Fārābī explicitly refers to “the eleventh book of [the *Metaphysics*] which bears the sign of *lām*” (34.12-3).

knows essentially [*bi-l-dhāt*] and is real⁵⁵ essentially [*ḥaqq al-dhāt*], and [2] about the separate beings [*al-mawjūdāt al-mufāriqa*] which are posterior to [this principle], and [3] about the order of being that the beings [coming] out of it have [*fī kayfiyyat tartīb wujūd al-mawjūdāt ‘anhu*].

In (1) of this passage, Aristotle addresses the single ultimate principle of “being as a whole,” or “all the beings” as in T1 or “being simpliciter” as in T2, which is God. So, it is clear that at least the main subject of the theology part of the universal science is discussed in *Met. Λ* according to al-Fārābī’s understanding of the aim of *Met. Λ*. At first sight, it is not obvious what are “the separate beings” mentioned in (2) right above. These separate beings are posterior to God but are discussed in *Met. Λ*. This is not the only place al-Fārābī talks about the separate things in this work. As I quote below in T4 and discuss in detail, al-Fārābī claims that the general predicates like being and unity studied by ontology belong to everything: both to the natural things, and to the unnatural things. And he mentions two kinds of unnatural things: “the entities separate in reality [*mufāriqa bi-l-ḥaqīqa*]” and the entities “separate in imagination [only] [*bi-l-wahm*]” (36.6-7). The latter are the mathematical objects. Al-Fārābī argues in the earlier half of T4 that the theology part of metaphysics studies what is abstracted (*jurrida*) in reality, not only in imagination like the mathematical objects (36.2-4). So, these “entities separate in reality” studied by the theology part of metaphysics must be the “separate beings” studied in *Met. Λ* according to al-Fārābī.

Finally, according to al-Fārābī’s understanding of the aim of *Met. Λ* in T3 (3) above, this book is also about how the beings are ordered in their procession from God (‘*anhu* is singular). I will come back to this point later, but first I want to get clearer on what these separate beings are.

To do this, we should remember that in the extended passage under consideration of which T2 is the beginning, namely *On the Aims* 35.16-36.9, al-Fārābī presents his version of *Met. E.1* 1025b18-6a23. To put it shortly, the science under consideration is a theoretical science like natural science and mathematics. Natural science studies “things which are non-separate

⁵⁵ I translate *ḥaqq* normally as “real” instead of “true” because I reserve “true” for *ṣādiq* unless the context makes it necessary to translate *ḥaqq* as true. It is worth noting that *al-Ḥaqq* is one of the names of God mentioned in the Quran (e.g., 18:44, 22:6, 24:25, 31:30).

[*achōrista*]⁵⁶ and not immovable [*akinēta*]” (1026a13-4). Some branches of mathematics (*enia mathēmata*) studies “things *qua* immovable and *qua* separate” (1026a9-10), and a few lines below Aristotle adds that apparently the same branches of mathematics (“*tēs de mathēmatikēs enia*”) study “things which are immovable yet not separate [*chōrista*] but presumably they are as in matter [*hōs en hulē(i)*]” (1026a14-5) In other words, the things studied by these branches of mathematics are not in fact separate but they are treated *qua* separate. There is a tension between these two passages: one says that these branches of mathematics study immovable things; the other says it studies them *qua* immovable, with the implication that they are not in reality immovable. I will say a bit more about this below. Since al-Fārābī simply speaks generally of mathematics in *On the Aims*, I will also talk simply about mathematics in the following discussion of Aristotle, but especially in connection with the *Met.* E.1 passage under consideration, I mean these particular branches of mathematics Aristotle refers to without naming them here.⁵⁷

In contrast with natural science and mathematics, first philosophy, i.e., the science under consideration, studies what is prior to the objects of mathematics and natural science, i.e., “things which are separate and immovable” (1026a10-16). What is meant by “separate” or “non-separate” in this passage depends on whether we should read *achōrista* with all the Greek mss. (and the Arabic translation following this reading)⁵⁸ at 1026a14, or following some of the modern editions,⁵⁹ we should emend that *achōrista* into *chōrista*. For ease of reference, I call the reading of *chōrista* here the modern reading, and the other the traditional reading.

The modern reading and the traditional reading have different claims about the separateness of the objects of natural science: according to the modern reading, natural science studies separate

⁵⁶ I am following the mss. readings and the reading of the Arabic translation. More on the emendation of this *achōrista* into *chōrista* in some modern editions, see the following.

⁵⁷ Presumably, the branches of mathematics that study immovable objects are the branches of ‘pure’ mathematics like arithmetic and geometry, while the branches of mathematics that study movable objects in some sense are the branches of ‘applied’ mathematics, like astronomy, that are subordinate to the ‘pure’ branches. On the subject of ‘pure’ and ‘applied’ mathematics, see *Phys.* II.2 193b22-4a12; especially 194a7-12 is informative. In particular, that astronomy is a branch of mathematics studying the locomotion of perceptible but eternal substances (i.e., the heavenly bodies) but other branches like arithmetic and geometry do not study any substance, see *Met.* Λ.8 1073b3-8. This last passage was brought to my attention by Stephen Menn.

⁵⁸ 707.1: *li-ashyā’ lā tufāriqu* translating *peri achōrista* at 1026a13-4. That said, Stephen Menn pointed out to me that a Latin translation of the *Metaphysics* (translatio media or anonyma) apparently reads *chōrista* here.

⁵⁹ For example, Jaeger’s and Ross’ OCT editions print *chōrista*. Stephen Menn pointed out to me that not all modern editions follow this emendation. For example, Bonitz prints *achōrista* here, following the mss.

things, while according to the traditional reading, natural science studies non-separate things. In Aristotle, “separate” can mean separate from other things, i.e., self-subsisting,⁶⁰ or it can mean separate from matter, i.e., immaterial.⁶¹ These two ideas are related, but they come apart, most notably, in the case of material natural substances; they are separate in the first sense but not in the second sense. According to the modern reading, “separate” should mean self-subsisting because the natural objects studied by natural science are all material as Aristotle implied right above at E.1 1025b30-6a6.⁶²

According to the modern reading, the first principles and causes of being *qua* being studied by the science under consideration are characterized by two independent properties: they must be self-subsisting, and they must be immovable. They must be self-subsisting because if they subsisted through something else, they would be posterior to those things.⁶³ They must also be

⁶⁰ *Met.* H.1 1042a28-31: the form-matter composite substance, i.e., perceptible, natural substance, is “separate simpliciter [*chōriston haplōs*];” the qualifier “*haplōs*” is added because not all substances are separate without any condition attached to their separateness; Aristotle says as an explanation of this claim, “for of the substances according to *logos* some are separate while others are not,” where presumably “*ousiai kata ton logon*” means the forms and the immaterial substances studied in *Met.* Λ. As Aristotle pointed out in the preceding clause (1042a28-9), the forms are separate only in *logos* (also see *Phys.* II.1 193b4-5), while he argues in *Met.* Λ that the immaterial substances, i.e., the movers of the heavens are separate, both in the sense of separated from matter as well as in the sense that they are self-subsisting.

Aristotle adds separateness, i.e., being *chōriston* as a condition for something to be a substance (see, e.g., Z.3 1029a27-8). Presumably, also in this sense of self-subsisting that Aristotle claims that “none of the other categories is separate, but only this [sc. substance]” (*Met.* Z.1 1028a33-4). He makes a similar point at *Phys.* I.2 185a31. Perhaps his rather obscure characterization of an accident as “that which, belonging in something though not as a part, cannot exist separately [*chōris*] from that in which it is” (*Cat.* 2 1a24-5) is to be read along these lines too, i.e., an accident is not self-subsisting but subsists through something else (the substance), while the substance is self-subsisting (according to the *Categories*, only the primary substances (i.e., particular substances like Socrates, Bucephalus etc.) seem to have this feature, strictly speaking: see *Cat.* 5 2a34-b6).

⁶¹ The natural substance is said to be not “separate” at E.1 1025b28, and this seems to mean separate from matter as Aristotle argues in the following that natural things are with matter. Also there are passages where Aristotle asks whether there are substances which are separate and beyond the perceptible substances (*para tas aisthētas*) (e.g., Z.2 1028b28-31, K.2 1060a8-9, M.9 1086b8-9); “separate” in such contexts could mean self-subsisting but also separated from the perceptible features, and being separate from perceptible features would be practically equivalent to being separate from matter in the sense of matter relevant here (see the following paragraphs and Footnote n.67 below for the close association between being perceptible, material (according to the sense of matter implying a potential subject of change), and natural). To these passages, we can also add many other passages in Aristotle where he discusses whether there are Platonic Forms, i.e., forms that are separated, or whether the universals can be separated, or whether mathematical objects can be separated. In most of these passages, if not all, “separated” seems to have the double sense of self-subsisting as well as separated from the subjects or the natures in which these forms or mathematical objects are ordinarily taken to subsist; separation from such subjects or natures would also imply a mode of existence separated from matter (where “matter” is taken in its sense as the subject of change, closely associated with being natural and perceptible).

⁶² That natural science only studies things which have matter is stated or implied by Aristotle in other places too: e.g., *Met.* α.3 995a14-17.

⁶³ See, for example, *Met.* N.1 1087a29-b4 where Aristotle argues that the first principles must be self-subsisting, not subsisting by something else (so the contraries cannot be the first principles).

immovable, because if they are movable, that which can move them would be prior to them.

According to the modern reading, the science under consideration differs from natural science in that although both study things which are self-subsisting, natural science studies movable things; also, the science under consideration differs from mathematics in that although both study things which are immovable (or mathematics studies them *qua* immovable), mathematics studies things which are not in reality self-subsisting (though mathematics studies them *qua* separate).

So according to the modern reading, the first principles and causes of being *qua* being studied by the science under consideration are characterized by two independent properties, but according to the traditional reading, they are characterized by properties that are more closely related. If “separate” means separate from matter as the traditional reading has it, and since according to the sense of matter we seem to have in E.1, something has matter just in case it is subject to some motion, immaterial or separate from matter and immovable would amount to the same thing.⁶⁴ Since the presence of matter means the potentiality for change and vice versa, being immaterial, being immovable, and being a pure actuality all come down to the same thing. That the first principles studied by theology, i.e., the movers of the heavens are immaterial and are pure actualities is a point Aristotle explicitly makes.⁶⁵ The objects of mathematics present a special case, because although they are not separate from matter but are “as in matter” (*Met.* E.1 1026a15), so they are *in reality* movable, but mathematics *treats* them *qua* separated from matter, and to the extent that they are so treated, they are separated from motion too. In other words, mathematics studies things which are in reality non-separate from matter and hence are movable; but mathematics studies them *qua* separate from matter, and to that extent, also *qua* immovable.⁶⁶

⁶⁴ More on the senses of “matter (*hylē*)” used by Aristotle as a philosophical term, see Chapter 2 Section 4 Footnote n.384. For my claim that the sense of matter closely associated with motion is relevant in *Met.* E.1, see, especially, 1026a2-3.

⁶⁵ That the substance of the movers of the heavens is actuality and they are immaterial, *Met.* Λ.6 1071b12-22; that the movers of the heavens are separate from perceptibles: Λ.7 1073a4-5. Also see Λ.8 1074a31-7 where it is implied that the prime unmoved mover (i.e., the mover of the outermost heaven), in particular, is actuality and is without matter.

⁶⁶ See *Phys.* II.2 193b31-5; compare also 194a7-12; according to this latter passage, geometry would be a relevant branch of mathematics the E.1 argument under consideration concerns, unlike the “more physical” branches of mathematics like astronomy also mentioned in the surrounding passage in *Phys.* II.2.

Met. K.3 1061a29-b3 tells a slightly different story of the generation of the mathematical objects; according to this account, the mathematical objects result from taking away (*perihairēin*) the perceptible features (*ta aisthēta*), but the examples of such *aisthēta* that are separated are all qualities (“heaviness [*baros*], lightness [*kouphotēs*], hardness [*sklērotēs*], and its contrary, as well as hotness [*thermotēs*], coldness [*psuchrotēs*] and the other perceptible

contraries”), and Aristotle adds that as a result of the separation of these *aisthēta* “only the quantified and continuous [to *poson kai suneches*] remains” and geometry studies the *per se* attributes of this. Indeed, given Aristotle’s account of the *proper* objects of perception in *DA* II, it seems that *ta aisthēta* in this sense would be qualities (while quantities (and movement as a *kata sumbebēkos* quantity) seem to be restricted to the common objects of perception: see *DA* II.6 418a17-20, III.1 425a13-30).

There is a difference between saying that the separation that produces the mathematical objects is separation from motion as we seem to have in *Phys.* II.2 and *Met.* E.1 and saying that it is a separation from perceptible *qualities*; if qualities are taken away, we would no longer have alteration, but it seems possible to have other kinds of motion. It seems that Aristotle combines these two views in *Met.* M.3 by suggesting that there are several levels of separation or abstraction from perceptible substances in an order of complexity: first a perceptible thing can be treated as movable, and insofar as it is treated as movable, it is treated as separated from other features it has that are not *per se* attributes of its motion. Locomotion is the primary sort of motion in the sense that anything that can move can also move by locomotion but there are things that can move by locomotion without being able to move by any other kind of motion (sc., alteration, growth and diminution, generation and corruption), like the heavenly bodies (for an extensive argument that locomotion is the primary sort of motion according to various senses of priority including the sense of priority mentioned here, see *Phys.* VIII.7 260a26-1a26; that locomotion is prior to other kinds of motion in the sense mentioned here is also asserted or implied in several places in the *Metaphysics* usually with the statement or the implication that the eternal natural substances, i.e., the heavenly bodies have only locomotion: See, for example, *Met.* H.1 1042a32-b6, H.4 1044b3-8, Λ.2 1069b24-6, Λ.7 1072b4-10, 1073a11-2). So perceptible things can be treated as movable by locomotion (only), and insofar as it is treated as movable by locomotion (only), it is treated as separated from other features it has that are not *per se* attributes of locomotion. This step would also involve separation from all the perceptible *qualities* that the K.3 passage cited above names. Although not named by Aristotle in M.3, this step seems to yield astronomy and also the kinetic theory whose traces we find in the *Physics* (mentioned in several places in *Phys.* VI and VII but see especially VII.5; also see IV.8 215a24ff for the relation between the density of the medium in which something moves and its speed). Next, a movable thing can be treated not insofar as it is movable but insofar as it is a solid; insofar as it is treated as a solid, it is separated from other features that it has that are not *per se* attributes of its being a solid (with the *per se* attributes of solids (shape, proportion etc.) remaining). We can also obtain the magnitudes in fewer dimensions in this way by abstracting from solids everything that does not pertain to their limits, i.e., treating them insofar as they are surfaces, from surfaces, we can get lines, and finally from lines points, i.e., the limits of the lines which are not divisible but have a position. We get the magnitudes and points studied by geometry in this way. Finally, a magnitude can be treated not insofar as it is divisible (into parts) but insofar as it is not divisible (as a whole) and without a position; insofar as it is treated as such, i.e., as a unit (*monas*), it is separated from other features that it has that are not *per se* attributes of a unit and of units, i.e., numbers (with the *per se* attributes of unit and numbers (odd, even etc.) remaining). This step yields arithmetic. It is worth stressing that the order of complexity among the steps described above does not imply that, e.g., an arithmetician *qua* arithmetician also does geometry because treating a perceptible thing as a unit implies also treating it as a magnitude. So, an arithmetician can treat perceptibles as units *at once* and can treat them *only* as units without the implication that they are also somehow necessarily treated as magnitudes. One of Aristotle’s main concerns in this chapter is to explain how mathematical objects really exist in the sense, at least, that we can make true claims about them even though they do not exist as separate from perceptible objects in reality. In other words, there are no self-subsisting mathematical objects, but there is a science of such objects. So, Aristotle argues at 1077b20-30, “... it is clear that it is possible for there to be accounts [*logous*] and demonstrations also about the perceptible magnitudes, not insofar as they are perceptible but insofar as they are of this sort [*toiadi*]. For just as there are many accounts [of them] insofar as they are movable alone, without what each of this sort of things is and without their attributes, and it is not necessary on account of these that there is a movable thing which is separate [in reality] from the perceptibles or that in them there is some nature set apart [in reality] [*aphōrismenēn*], in this way also in the case of the movable things, there will be accounts and varieties of knowledge [*epistēmai*], not insofar as they are movable but insofar as they are solids [*sōmata*] alone, again insofar as they are planes [*epipeda*] alone, insofar as they are lines [*mēkē*] alone, and [in general] insofar they are divisible [i.e., *qua* magnitude in general], and [next] insofar as they are indivisible while having a position [i.e., a point] and [finally] insofar as they are indivisible alone [i.e., without a position; sc., a unit].” Aristotle implies also further down that there is an order of complexity between these steps: “to the extent that [a science] is about things which are prior in account and are simpler, it has exactness [*to akribes*] to a greater degree... so without magnitude more than with magnitude, and most of all without motion; but if [it has] motion, most of all [if it has] the primary [motion, i.e., locomotion]; for [the primary motion] is the simplest [motion], and of [the primary motion, the simplest is] the uniform one [*homalē*]” (1078a9-13). In

In short, both the modern reading and the traditional reading agree with the views Aristotle expresses elsewhere. My concern here is not to adjudicate what is likely to have been written originally by Aristotle.⁶⁷ All the extant Greek mss. and the medieval Arabic translation have the

other words, what does not have magnitude (point and unit) is simpler and more prior in account to what has magnitude; of the things that have magnitude, those without motion (geometrical solid, plane, line) are prior to and simpler than what has motion. Of the magnitudes in motion, those with locomotion alone are prior to and simpler than what has other sorts of motion. And finally, of the magnitudes that have locomotion alone, those with uniform motion are prior to and simpler than what has non-uniform motion. The order of these objects in priority in account and in simplicity generally agrees with the order of complexity in their ‘abstraction’ as we saw in the previous passage. The sciences which study each of these are also ordered in exactness accordingly. (For an apparently more general account of the criteria by which one science is said to be more exact than (*akribesteron*) and prior to another, see *APo* I.27; also see *Met.* A.2 982a25-28 about geometry and arithmetic in particular. For the characterization of uniform (*homalē*) motion, see *Phys.* V.4 228b15-9a6; in the case of locomotion in particular, it seems that a continuous locomotion (i.e., the locomotion of the same thing moving in the same sort of path without interruption in its motion) is uniform if it also has a uniform path (straight line or circle) and moves with a constant velocity. If the whole motion is considered, uniform circular motion is the only uniform locomotion because rectilinear motion must have change of velocity at the beginning and the end of it and since there is no actual infinity, there cannot be rectilinear motion without a beginning or an end (*Phys.* VIII.9 265b11-16)). Finally, Aristotle illustrates more concretely how an arithmetician and a geometer treat their objects at once: “... human *qua* human is one and indivisible; [the arithmetician] posited it as one and indivisible [*etheto hen adiaireton*], and then he investigated whether something is an attribute of [*sumbebēken*] human insofar as he is indivisible; the geometer, on the other hand, [treated him] not insofar as he is a human nor insofar as he is indivisible but insofar as he is a solid [*stereon*]; for it is clear that those things which would belong to him even if he were somehow not indivisible can belong to him even without these [i.e., without his attributes insofar as he is indivisible]; so on account of this the geometers make correct assertions [*orthōs legousi*], and discuss about beings [*peri ontōn*], and [the mathematical objects are indeed] beings; for being is said in two ways, one as actuality [*entelecheia(i)*], and other in the material way [*hulikōs*]” (1078a23-31). I want to thank Stephen Menn for bringing *Met.* M.3 to my attention in this context. In any case, in his *Commentary on the Beginning of Elements I* (*Sharḥ Ṣadr al-Maqāla al-Ūlā min Kitāb Ūqlīdis*), al-Fārābī seems to follow *by and large* the account of *Met.* K.3, i.e., the relevant separation is separation from perceptible *qualities* (see p.185-6 clause nn.9-30 in the Arabic edition in Gad Freudenthal, “La Philosophie de la Géométrie d’al-Fārābī: Son Commentaire sur le Début du 1er Livre et le Début du Ve Livre des Éléments d’Euclide,” *Jerusalem Studies in Arabic and Islam* 11 (1988): 104–219.). That said, in clause n.24 (p.186), al-Fārābī mentions motion (*ḥaraka*) and rest (*sukūn*) among the features that would *not* be attached to the mathematical objects after they are separated. So, after all, al-Fārābī’s considered view might be closer to Aristotle’s more comprehensive account in *Met.* M.3 even though it does not clearly engage with all the complexity of Aristotle’s account in *Met.* M.3.

⁶⁷ That said, there seems to be some textual evidence in favor of the modern reading. According to the modern reading, the science under consideration differs from natural science in one respect (natural science deals with movable things), and assuming that mathematics studies immovable things in a relevant sense, the science under consideration differs from mathematics in another respect (mathematics deals with non-separate things). Indeed, *Met.* K.1 1059b12-4 presents the subject-matter of the science under consideration in contrast with the objects of mathematics and natural science in a way very similar to the modern reading: “The science which is sought now does not deal with the mathematical objects either because none of them is separate, nor does it deal with the perceptible substances [*tōn aisthētōn ousiōn*] for they are corruptible [*phthartai*].” This K.1 passage talks about perceptible substances, not natural things, but “all perceptible substances have matter” (*Met.* H.1 1042a25-6), and “the perceptible substance is changeable [*metablētē*]” (*Met.* A.1 1069b3), and “every perceptible thing subsists in matter” (*DC* I.9 278a11), and I do not see any reason to deny the converse either. Moreover, as I pointed out above, Aristotle implies at E.1 1025b30-6a6 that natural science studies material things and only them. Along these lines, Aristotle seems to be stating at *Met.* A.1 the perceptible substances are studied by natural science because they are movable (1069a30-b2). This K.1 passage states that the perceptible substances are corruptible; this is not true strictly speaking because the heavenly bodies are perceptible substances and they have matter, though they are not corruptible (they have only the matter for locomotion, not for generation and corruption, and apparently not for other

traditional reading of *achōriston* at 1026a14, and that is the reading *On the Aims* is based on. As explained above, since being material and being subject to change seem to be equivalent in the sense of matter relevant for the account from E.1 under consideration, we can characterize the three theoretical sciences according to the traditional reading only in terms of separateness from matter. So, natural science studies things which are not separate from matter; mathematics studies things which are not separate from matter but studies them *qua* separate from matter; and finally, the science under consideration studies things which are separate from matter.⁶⁸ This

sorts of change either) (see, *Met.* Λ.1 1069a30-2, Λ.2 1069a24-6; also consider H.1 1042a32-b6 and the other passage in Aristotle where locomotion is said to be the primary motion in the sense that it is possible for something to have the capacity for locomotion without having the capacity for other kinds of motion, but the converse does not hold).

Moreover, it can be mentioned as an explanation of the mistake presumed in the modern reading that copying “*achōriston*” as a mistake for “*chōriston*” in a passage filled with many instances of “*achōriston*” and “*chōriston*,” especially given that *achōriston* also makes decent sense here, is not hard to explain.

⁶⁸ We find a similar characterization of these three theoretical sciences in terms of separateness in *DA* I.1 too. Right before the *Met.* E.1 passage under discussion here, Aristotle argues at 1025b26-6a6 that natural science uses definitions of form-matter composite like the snub (*simon*) which is defined as convex nose (*koilē rhis*) where convex is the form-analogue in this example and nose is the matter-analogue. Similarly, the definitions of natural things are definitions of the form-matter composite “for the definition of none of them is without motion, but rather it always has matter” (1026a2-3). Although some details are obscure, at *DA* I.1 403a29-b9 Aristotle argues that a natural scientist defines the things he studies by combining the formal and the material accounts (e.g. that a house is “a shelter which prevents from destruction by the wind, the rain, and the heat” and that it is “stones, bricks, and timbers;” according to the third account which combines them, we state “the form in these things for the sake of those things;” accordingly, a house is a shelter made of stones, bricks, and timbers, for the sake of prevention from the wind, the rain, and the heat). Then he characterizes the three theoretical sciences: “the natural scientist [investigates] all the things which are the activities and attributes [*erga kai pathē*] of this sort of body and this sort of matter... Of the things which are not separate [*chōristōn*], where they are not attributes of this sort of body and are abstracted [*ex aphaireseōs*], the mathematician [investigates them]; where they are separate [*kechōrismena*], the first philosopher [investigates them]” (403b11-16).

Hein suggests that this three-partite division of beings and the corresponding division of the theoretical sciences might go back to the division of beings into the perceptibles (*aisthēta*), the mathematical (*mathēmatika*), and the intelligibles (*noēta*) Aristotle cites and attributes (explicitly or implicitly) to Plato: *Met.* A.6 987b14-18, Z.2 1028b19-21, and K.1 1059b6-8. Although not mentioned by Hein, the K.1 passage is from the K version of the fourth aporia, and the same idea is also expressed in the B version of this aporia too (the initial statement: B.1 995b13-8; in the extensive discussion of this aporia: B.2 997a34- b3). The A.6 passage states that the mathematical are intermediate between the Forms and the perceptible things and attributes this view to Plato. Z.2 speaks of the Forms, the mathematical, and the perceptibles as distinct kinds of substances and attributes this view to Plato but does not state explicitly that the mathematical are between the Forms and the perceptibles. In the versions of the fourth aporia in B.1, B.2, and K1, Aristotle states that the mathematical are intermediate between the Forms and the perceptibles but he does not name Plato; nevertheless, it is clear from the context that he targets Plato, especially if the A.6 and the Z.2 passages are also taken into consideration. A passage from Plato that to some extent reflects the view Aristotle attributes to him is the divided line analogy at the end of *Republic* VI (509d-511e). This account contains a fourth category beyond the three mentioned above, namely the lowest category in the hierarchical order which comprehends the images (*eikones*) like the shadows and the reflections in water or bright surfaces, and the corresponding cognitive power is *eikasia* (‘image-grasping’) but it is understandable that a reader of this passage in Plato would not think that this last category has an as interesting a function to group entities in the world and the corresponding cognitive faculties as the other three, and might perhaps also think that Plato posited it mainly to illustrate by an analogy the paradigm-copy relation between the intelligible things (*noēta*) and the visible (*horata*) or perceptible things.

picture presents a scale from material to immaterial where in the middle we have things which are material but are treated as immaterial by mathematics.

We find this order in *On the Aims*, namely that mathematics is above natural science, and the universal science is above both of them, in part explicitly stated and in part implied, but the reasoning al-Fārābī provides for this comparison between natural science, mathematics, and the universal science shows the more direct influence of this account of a material to immaterial scale we find in the late antique Greek commentaries in the school of Ammonius. I say more on this point below in Section 4, but to illustrate this point, let me just summarize here what Ammonius says in his division of philosophy account in the introduction to philosophy prefixed to his *Isagoge* commentary: some things are completely not separate from matter, others are not separate from matter in being (*hupostasis*) but only in thought (*ennoia*), and the third groups has things which are separate from matter completely; these are studied by natural science, mathematics, and theology respectively, and these sciences are ordered accordingly on a scale from not separate from matter to separate from matter (11.25-13.7). After stating that theology is a part of the universal science in T2, al-Fārābī adds, “and because⁶⁹ these entities [*hādhihi al-ma‘ānī*] are not specific to natural things, but rather they are above [*a lā*] the natural things in general [*‘umūman*], this science is above natural science and is after [*ba‘da*] natural science; for this reason it was necessary⁷⁰ to call it the science of what is after nature [*‘ilm mā ba‘da al-ṭabī‘a*, i.e., *hē (epistēmē) tōn meta ta phusika* = metaphysics]” (35.19-21). Bertolacci takes “these entities” to refer to being, unity, and the other things studied by ontology and he translates “‘*umūman*” as “in universality.”⁷¹ According to this interpretation, al-Fārābī’s argument here is that e.g. being and unity are above natural things in that they are more general than them, and by virtue of the fact that the universal science (in its ontology part) studies such general things, it is above and after natural science. This is a reasonable interpretation of the passage and might as well be what al-Fārābī intended. That said, since E.1 1025b18-6a23 through the Ammonian lens is behind the extended passage from *On the Aims* under consideration, and since al-Fārābī talked about theology right before this passage, we might be justified to take “these entities” in this passage to refer to the entities separated from matter, including God, which are studied in the

⁶⁹ I read *ولأن* with Kiankhah; Dieterici has only *لأن*. Kiankhah reports in the apparatus that all the mss. she consults and the Hyderabad edition have *ولأن*.

⁷⁰ I read *واجب* with Kiankhah instead of Dieterici’s *واجب*.

⁷¹ Bertolacci *The Reception of Aristotle’s Metaphysics*, 68.

theology part of the universal science. If this is the case, then al-Fārābī's argument would amount to this: since the universal science (in its theology part) studies the things separated from matter, and since the things separated from matter are above the natural things in general or as a whole ('*umūman*), the universal science is above and after natural science. I think that the interpretation I propose better coheres with the *Met.* E.1 passage in the background through the Ammonian lens than Bertolacci's interpretation. One big problem with my interpretation is that Bertolacci can point to an antecedent in the text for "these entities [*hādhihi ma 'ānī*]," even though there is a different line of thought (the discussion of theology) separating this antecedent from the phrase under consideration, but I cannot clearly point to an antecedent for this phrase. The entities separate from matter (in the plural) are not mentioned before this passage but only after this passage. That said, al-Fārābī just talked about the subject-matter of theology, and in anticipation, he might have used the phrase "these entities" to refer to the entities separate from matter (including but not limited to God) that are studied by theology. This would be infelicitous, but not unheard of.

In any case, in the rest of the extended passage from *On the Aims* we are discussing, we can see even more clearly that the ideas from the *Met.* E.1 passage through the Ammonian lens inform al-Fārābī's account here. Al-Fārābī just argued that the universal science is above and after natural science, and hence should be called metaphysics. His express aim in the following argument is to show that even though mathematics is also above natural science in some respect, it should not be called metaphysics but only the universal science deserves this name. In this argument, al-Fārābī contrasts mathematics both with natural science and the universal science (35.21-36.9), and this contrast clearly draws on the contrast between natural science, mathematics, and metaphysics in E.1 especially in the version of Ammonius and his followers. Al-Fārābī says that "even if mathematics⁷² is above natural science since its subjects are abstracted from matter [*mujarrada*⁷³ '*an mawādd*]," mathematics is not metaphysics because of the differences between the subjects of mathematics and metaphysics; although the subjects of the mathematical sciences are abstracted from matter, the abstraction in mathematics is "in imagination, not in being [*wahmī lā wujūdī*];" rather, the mathematical objects have their being

⁷² I read العلم التعاليمي with Kiankhah instead of Dieterici's العلم التعاليمي.

⁷³ Dieterici: متجردة.

only in natural things (35.21-36.2). By contrast, metaphysics has two groups of subjects, and both are different from the subjects of mathematics:

T4 *On the Aims* 36.2-9

وأما موضوعات هذا العلم فمنها ما ليس له⁷⁴ وجود البتة في الطبيعيات لا وهمي ولا حقيقي وليس إنما جرّدها الوهم عن الطبيعيات فقط بل وجودها وطبيعتها⁷⁵ أنها⁷⁶ مجردة، ومنها ما يوجد⁷⁷ في الطبيعيات وإن كان يتوهم مجرداً⁷⁸ عنها ولكن ليس يوجد⁷⁹ فيها بذاتها بحيث لا يتعرى عنها وجودها وتكون⁸⁰ أموراً قوامها بالطبيعيات بل يوجد⁸¹ للطبيعيات وغير⁸² الطبيعيات من الأمور المفارقة بالحقيقة أو المفارقة بالوهم فإن العلم المستحق لأن⁸³ يسمى بهذا الاسم هو هذا العلم فإن هو⁸⁴ وحده دون سائر العلوم علم ما بعد الطبيعة

[1] Among the subjects of this science [i.e., the universal science = metaphysics] is what does not have a being [*wujūd*] in natural things [*fī al-ṭabīʿiyyāt*] at all, neither [a being] in imagination [*wahmī*] nor in reality [*ḥaqīqī*], and it is not simply the case that the imagination abstracts them from the natural things; rather, their being and nature is such that they are abstracted. Also, [2] [among the subjects of this science] is what is in the

⁷⁴ Kiankhah: لها. Kiankhah prefers plural pronouns and plural subjects for verbs in several places in this passage, sometimes even when all the mss. she consults are against it. Several of these instances refer to the indefinite relative pronoun ما: it is usually taken as grammatically singular, but this is compatible with its sense being singular or plural. So even if what ما refers to are many things, we can still use it as grammatically singular. So, I do not think that Kiankhah's pluralizations are forced upon us in consideration of the meaning of the text or by the fact that al-Fārābī starts to use a plural subject later on while referring to the same thing (e.g., وجودها وطبيعتها at line 4 still referring to the same things as the ما in the previous line), except in one place noted below. Moreover, the mss. Kiankhah consults never agree on these pluralizations and sometimes they agree against it. I will note all the places where Kiankhah proposes pluralizations, but I adopt only one of them. In any case, Kiankhah's pluralizations do not make a difference for my interpretation; they even support my claim that al-Fārābī talks about multiple things in these different subjects of metaphysics.

⁷⁵ Since I point out above and below that al-Fārābī talks about *multiple* things that are separate or abstracted from matter in reality, let me note based on Kiankhah's apparatus that all the mss. she consults read وجودها وطبيعتها here.

⁷⁶ Dieterici: إنما.

⁷⁷ Kiankhah: توجد.

⁷⁸ Kiankhah: كانت تتوهم مجردة.

⁷⁹ Kiankhah: ليست توجد.

⁸⁰ Dieterici: يكون. Kiankhah notes in her apparatus that three of the mss. she consults have يكون but the remaining two lack the diacritics for the first letter. In any case, the meaning of the clause clearly requires تكون here.

⁸¹ Kiankhah: توجد.

⁸² Dieterici: ولغير.

⁸³ Dieterici has بأن and Kiankhah has الذي, but Kiankhah notes in her apparatus that three mss. and the Hyderabad edition have لأن (and assuming that she has a negative critical apparatus, the other two mss. should have الذي). Al-Fārābī's main point here is that neither natural science nor mathematics deserves to be called metaphysics (*ʿilm mā baʿda al-ṭabīʿa*); so, we would expect him to say here that the science we described is the only science which deserves to be called metaphysics. Since the tenth form verb استحق governs a direct object, it would be natural to put the direct object of the active participle with ل.

⁸⁴ Dieterici: فهو إن.

natural things and even if it is imagined to be abstracted from [the natural things], it does not, however, exist in [the natural things] *per se* in a way that the being [of the entities under consideration] [*wujūduhā*] would not come apart from [the natural things] [*yata 'arrā 'anhā*] [at all] but that they would subsist by the natural things [entirely]; rather, it belongs both to the natural things and the unnatural things, be it the entities which are separate [*mufāriqa*] in reality or [only] in imagination; [3] therefore, the science which deserves to be called by this name is this science; so it alone, with the exclusion of the other sciences, is metaphysics [*'ilm mā ba 'da al-ṭabī'a*].

For ease of discussion, I divided the passage into three. In the first two parts of this passage, al-Fārābī states the two types of the subject-matters of the universal science; in the last part, he concludes his argument that of all the (theoretical) sciences considered, i.e., natural science, mathematics, and the universal science, only the universal science deserves to be called metaphysics. Al-Fārābī clarifies both types of the subjects of the universal science in contrast with the mathematical objects. Recall that the mathematical objects are abstracted from matter but only in imagination, not in being; they have their being in natural objects. The first group of the subjects of metaphysics comprehends things which are *by their nature* abstracted from matter. So, they are not like the mathematical objects in that the mathematical objects are abstracted *only in imagination* while having their being in the natural things. It is worth noting that for the things in the first group of the subjects of the universal science, al-Fārābī uses the plural pronouns (observe, e.g., *wujūduhā*, *ṭabī'atuhā*); so, al-Fārābī seems to be talking about the *several* things separated from matter in reality that the theology part of the universal science studies.

At first sight, it might not be obvious what sorts of things al-Fārābī talks about in T4 (2) above as the second group of the subjects of the universal science, but if we remember what the ontology part of the universal science studies, this should become clearer. Recall that as stated in T1 (1), ontology studies what is common to all beings, i.e., being and unity, and their kinds, and *per se* attributes etc. In T4 (2) here, al-Fārābī talks about what belongs to the natural things as well as to the unnatural things, and he specifies that there are two kinds of unnatural things: some unnatural things are separate from matter in imagination only (sc. the mathematical objects), while other unnatural things are separate from matter in reality (sc. the entities studied by the theology part

of the universal science). This classification follows the classification of beings into three in *Met.* E.1 especially in its Ammonian version as outlined above: what is not separated from matter (natural things), what is not separated from matter in reality but separated in imagination (mathematical things), and finally what is separated from matter (the objects of theology). Since these three categories are supposed to be exhaustive of beings, in T4 (2), al-Fārābī in effect talks about what belongs to all beings, i.e., being and unity, the primary subject-matters of the ontology part of the universal science. Al-Fārābī adds there that even if we imagine, e.g., being or unity to be abstracted from natural things, their condition is not like the condition of the mathematical objects because unlike the mathematical objects, being or unity do not subsist entirely by the natural things; they belong to both natural and unnatural things. Finally, al-Fārābī concludes in (3) that not mathematics or natural science but only the universal science deserves to be called metaphysics.

After T4, al-Fārābī launches into a detailed discussion of the subject-matter of the ontology part of the universal science:

T5 *On the Aims* 36.9-17

والموضوع الأول لهذا العلم هو الوجود⁸⁵ المطلق وما يساويه في العموم وهو الواحد ولكنه لما كان علم المتقابلات واحدا ففي هذا العلم أيضا النظر في العدم والكثرة⁸⁶ ثم بعد هذه الموضوعات وتحقيقها ينظر في الأشياء التي تقوم منها مقام الأنواع كالمقولات العشرة⁸⁷ للموجود وأنواع الواحد كالواحد بالشخص والواحد بالنوع والواحد بالجنس والواحد بالمناسبة وأقسام كل واحد من هذه وكذلك في أنواع العدم والكثير ثم في لواحق الموجود كالقوة والفعل والتمام

⁸⁵ Kiankhah tries to impose a greater consistency in terminology here than required. She wants that all the predicates mentioned in this passage as being studied by this science are not abstract nouns but have the adjectival form; so, she wants al-Fārābī to speak consistently about *al-mawjūd*, *al-wāḥid*, and *al-kathīr* and she opts for these forms over *al-wujūd*, *al-waḥda*, and *al-kathra* even when all the five mss. she consults and the Hyderabad edition agree against her. I do not think that these two pairs of terms make a difference in meaning here. Even if al-Fārābī says *al-mawjūd*, he clearly does not propose that the science under consideration studies a determinate thing which exists or the whole class of things which exist, but it studies them insofar as they exist, i.e., it studies being or existence. So, in this context saying that philosophy studies *al-mawjūd al-muṭlaq* or *al-wujūd al-muṭlaq* does not make a difference. Similarly, for *al-wāḥid* and *al-waḥda*, *al-kathīr* and *al-kathra* here. To be clear, I am fully aware that there are contexts where it is very important to make a distinction between e.g., *al-mawjūd* or *al-wāḥid* and *al-wujūd* or *al-waḥda* but this is not such a context. Besides, when al-Fārābī first gives an account of the subject-matter of metaphysics at 35.9 (quoted in T1 above), he mentions “*al-wujūd wa-l-waḥda*.” Kiankhah also prints there “*al-wujūd wa-l-waḥda*” and she does not record any variant readings in the apparatus. Finally, she notes in n.128 that al-Fārābī uses *ma dūm* as the opposite of *mawjūd* in other works but she does not correct instances of ‘*adam*’ in this passage into *ma dūm* as one would expect her to do in the interest of the sort of consistency in terminology she pursues because *al-ma dūm* as opposed to *al-adam* would be similar in form to *al-kathīr* as opposed to *al-kathra*. When Dieterici and Kiankhah disagree on these words, I will keep Dieterici’s readings, and I will note Kiankhah’s differences from Dieterici in footnotes with an information about the readings in the mss. consulted by her as recorded in her apparatus. Since we do not have a stemma based on a collation of a range of mss. that arguably represent diverse branches of the textual tradition, I will leave it to the reader to decide which reading they prefer. To repeat, I think that in these cases both readings mean practically the same thing. Also, I do not provide information about the mss. readings below about the instances where Dieterici’s and Kiankhah’s readings agree but as Kiankhah’s apparatus makes clear, almost every instance of *mawjūd/wujūd*, *wāḥid/waḥda*, and *kathīr/kathra* in this passage has variant readings in the mss. consulted by Kiankhah.

Kiankhah has *الموجود* here. Three mss. have *الموجود* but *الوجود* is also written in the margins of two of these mss.

⁸⁶ Kiankhah: *الكثير*. All five mss. and the Hyderabad edition have *الكثرة*.

⁸⁷ Dieterici: *العشر*.

والنقصان والعلة والمعلول وفي⁸⁸ لواحق الوحدة⁸⁹ كالهوئية⁹⁰ والتشابه والتساوي والموافقة والموازاة والمناسبة وغير ذلك وفي⁹¹ لواحق العدم والكثير

The primary subject of this science is [1.A] being simpliciter [*al-wujūd al-muṭlaq*] and what is equal to it in generality [*fī al-‘umūm*], i.e., the one [*al-wāḥid*]; however, [1.A2] since the science of the opposites is one, the investigation of non-being [*al-‘adam*] and multiplicity is also in this science. After these subjects and their examination [*taḥqīqihā*], [1.B] it investigates the things which are their quasi-species [*taqūmu maqām al-anwā*],⁹² like the ten categories for being, and the kinds [*anwā*] of the one like the one *qua* individual [*bi-l-shakhṣ*], the one in species [*bi-l-naw*], the one in genus, and the one by analogy [*bi-l-munāsaba*], and the parts of each one of these;⁹³ [1.B2] likewise, [it investigates] the kinds of non-being and the many. [1.C] Next, [it investigates] the *per se*

⁸⁸ Dieterici: -في.

⁸⁹ Kiankhah: الواحد. All five mss. and the Hyderabad edition have الوحدة.

⁹⁰ All five mss. and the Hyderabad edition have كالهوية, but Kiankhah proposes to emend it into كالهوئية following Bertolacci. Bertolacci proposes in a footnote that he reads *huwahuwiyya* instead of *huwiyya*. His reason is that *huwiyya* is used in the sense of being and existence later in *On the Aims* at 37.12, 37.14, 38.2 (*The Reception of Aristotle's Metaphysics*, 69 n.8). Along with this proposal, we can point out that Uṣṭath translates *tauto* / *tauton* as *huwa huwa* often than not (see *Met.* Δ.15 1021a10 τὸ αὐτό = الهو هو (609.13), Iota.3 1054a31 τὸ αὐτό = الهو هو (1286.2) (also several other instances in the rest of this chapter)) but not always (see *Met.* Γ.2 1003b36 τὰ αὐτὰ = المتفق (311.3), 1005a12 τὰ αὐτὸν = ما الشيء بعينه (331.10)). Unfortunately, Chapter 9 is missing from Averroes' *Long Commentary on the Metaphysics*; so, there is no easy way to verify how Uṣṭath translated ἡ ταυτότης at 1018a7. Al-Fārābī prefers بعينه to express the idea of sameness in *KW* and *Kitāb al-Jadal* (*Book of Dialectics*) (see Chapter 2 for sample passages from these works; in expressing the idea of sameness using بعينه, al-Fārābī agrees with the translation of the *Topics* he was using (i.e., al-Dimashqī's translation; more on this, see Chapter 2 Section 5). *Topics* I.7 as a whole is on the senses of sameness; for a passage from this chapter in al-Dimashqī's translation, see Chapter 2 Section 5; the whole chapter can be found on p.499-500 in Badawi's *Manṭiq Aristū*). So, it seems that al-Fārābī uses the term of a source he uses here (whether it was *al-huwiyya* or *al-huwahuwiyya*) and following Kiankhah and Bertolacci, I tentatively accept that it was *al-huwahuwiyya*. That said, the fact that *huwiyya* is used in the sense of being or existence later in *On the Aims* should not be taken as a conclusive reason to emend the *huwiyya* in the sense of identity here into *huwahuwiyya*; this would not be the only thing in the terminology used in *On the Aims* that might confuse the reader. As we saw above, al-Fārābī uses *‘ilm al-ta’līm* to refer to mathematics at 35.21, but later in his account of the aim of *Met.* E, he uses another term for mathematics: *al-riyāḍī* (37.10).

⁹¹ Dieterici: -في.

⁹² Since “*naw*” does not mean here and in similar places a species in relation to a genus in the strict sense, but a kind more loosely speaking (including the cases where the relevant term is not univocally said of its kinds like the kinds of being or the kinds of unity), I translated it as kind (e.g., in T1 above or in the following clause in (1.B) here). However, it seems that al-Fārābī wanted to make clear here that the ten categories are not *anwā* of being, strictly speaking, because being is not said of them univocally (but of substance by priority and of the accidental categories by posteriority). So, al-Fārābī speaks of the “quasi-species” or the things which are not species but are species-like in some relevant respects (*taqūmu maqām al-anwā*). Unity is also not a univocal term. So, when al-Fārābī talks about the *anwā* of unity in (1.B) here or of the *anwā* of being and unity in T1, he must mean their kinds in a looser sense.

⁹³ This claim that the main kinds of the one are the one *qua* individual, the one in species, the one in genus, and the one by analogy is in tension with al-Fārābī's considered views on the senses of unity as developed in *KW*. More on this, see Chapter 2 Section 3.

attributes [*lawāḥiq*] of being like potentiality, actuality, perfection, deficiency, cause, and the effect [*ma 'lūl*], and the *per se* attributes of unity like identity [*huwahuwiyya*], similarity, equality, congruence [*muwāfaqa*],⁹⁴ parallelism [*muwāzā*], proportionality [*munāsaba*] etc., and [1.C2] the *per se* attributes of non-being and the many.

The discussion of the subject of the ontology part of the universal science draws chiefly on *Met.* Γ.2. I divided the discussion of the subject of ontology in this passage into smaller chunks and labeled them as “1” followed by upper case letters and numbers to make it easier to compare this discussion with the earlier discussion of the subject of the ontology part in T1. Let me reproduce the relevant bit of T1:

T1 (1) (subject-matter of ontology) *On the Aims* 35.8-11

وأما العلم الكلي فهو الذي ينظر في الشيء العام لجميع الموجودات مثل الوجود والوحدة وفي أنواعه ولواحقه وفي الأشياء التي لا تعرض بالتخصيص لشيء شيء من موضوعات العلوم الجزئية مثل التقدم والتأخر والقوة والفعل والتام والناقص وما يجري مجرى هذه

the universal science investigates [1.a] the thing which is common [*'amm*] to all the beings [*al-mawjūdāt*] like being [*wujūd*] and unity [*waḥda*] and [1.b] [it investigates] its kinds and [1.c] its *per se* attributes [*lawāḥiqihī*], and [1.d] the things which are not attributed [*lā ta 'riḍu*] to each and every one of the subjects of the particular sciences specifically [*bi-l-takḥṣīṣ*], like priority, posteriority, potentiality, actuality, the perfect, the deficient, and whatever is in this way

The primary subject of the ontology part of the universal science is stated in T1 (1.a) and T5 (1.A). In T1, al-Fārābī says that it is “the thing which is common to all the beings,” but then he mentions two things as examples: being (*wujūd*) and unity (*waḥda*). (1.b) and (1.c) add that this science also studies “its kinds” and “its *per se* attributes.” Observe that we have the singular pronoun.⁹⁵ This suggests that being and unity are somehow one thing which is common to all

⁹⁴ I owe the translation of *muwāfaqa* as congruence to Jens Schmitt.

⁹⁵ According to Kiankhah's apparatus, all five mss. she consults and the Hyderabad edition have أنواعه ولواحقه with the singular pronoun, but she notes that in the margins of two mss. we also find أنواعها ولواحقها with the plural pronoun. Presumably a reader or a copyist felt uncomfortable with the fact that al-Fārābī apparently refers to وجود and وحدة as a single thing or he took the pronoun to refer specifically to *waḥda*, which is feminine. Even if these marginal comments were in the body of these two mss., we would still prefer the more difficult reading with the singular pronoun in the other three mss.

beings and is the primary subject of the ontology part. It is worth emphasizing that unity is not mentioned among the kinds or the *per se* attributes (*lawāḥiq*) of being. The primary subject of ontology is also stated in similar terms in T5 (1.A), which is “being simpliciter [*al-wujūd al-muṭlaq*] and what is equal to it in generality, i.e., the one [*al-wāḥid*].” Recall that in T2 al-Fārābī states that God is the principle of all beings, and it is not the principle of some beings to the exclusion of others, but it is the principle of “being simpliciter [*al-mawjūd al-muṭlaq*].” So, ontology’s primary subject is being simpliciter or being insofar as it is considered under that respect and not under the respect of the being of some particular nature, and “what is equal to it in generality, i.e., the one.” Perhaps it could be argued that T5 presents being simpliciter as the primary subject of ontology, and unity comes after it. Even if this is the case, it is clear that unity is not considered a kind or *per se* attribute of being in T5 either. On the contrary, al-Fārābī goes on to state in T5 that ontology studies (1.B) the kinds of being and the kinds of unity and (1.C) the *per se* attributes of being and the *per se* attributes of unity. So, unity is in some strong sense on a par with being as the subject of ontology, and even if one grants that being has some priority over unity as the subject of ontology, unity is clearly not a kind or *per se* attribute of being. I think that, at least according to *Met.* Γ.2 account of the subject-matter of metaphysics, unity is not a *per se* attribute of being for Aristotle either, but they have some special relation of equivalence.⁹⁶ For my current purpose of placing al-Fārābī’s *KW* in the context of his other metaphysical works according to his understanding of how the science of metaphysics is structured, both unity and being are the primary subjects of the ontology part of metaphysics, and even if being has some conceptual priority, unity and being are still equivalent in some relevant sense and unity is not conceptually subordinate to being as its kind or its *per se* attribute. As I say a bit more about this below in Section 6, that being and unity are equivalent for al-Fārābī as the primary subjects of ontology and that, unlike Aristotle, he took this equivalence claim seriously might have played some role in al-Fārābī’s much more extensive discussion of the senses of unity and multiplicity in *KW* compared to Aristotle’s discussion in the *Metaphysics*.

Let me continue with my comparison of T1 and T5 to spell out the subject of ontology. One major difference between the T1 account and the T5 account is that in T5 we have the opposites of being and unity, i.e., non-being (‘*adam*’) and multiplicity, mentioned along with being and

⁹⁶ I start to talk about the logical relation between being and unity in Γ.2 in Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ below, but I discuss this topic more extensively in Chapter 3 Section 3.

unity as the base level subjects of ontology. The reason for this is a familiar Aristotelian thesis that the science of the opposites is the same science; Aristotle applies this thesis in a similar context in his discussion of the subject-matter of metaphysics in *Met.* Γ.2 too (1004a9-22). So, in T1 we have (1.a) the thing which is common to all beings, i.e., being and unity as the base level subject of ontology, and then we investigate (1.b) its kinds and (1.c) its *per se* attributes. In T5, we have (1.A) being and unity and (1.A2) their opposites, non-being and multiplicity, as the base level subjects of ontology, and then we apply, as it were, ‘the kind’ and ‘the *per se* attribute’ operations to these first level subjects to obtain further subjects of ontology: so we have (1.B) the kinds (and the sub-kinds⁹⁷) of being and of unity and (1.B1) the kinds of non-being and of multiplicity, as well as (1.C) the *per se* attributes of being and of unity and (1.C1) the *per se* attributes of non-being and of multiplicity. Unlike in T1, in T5 al-Fārābī specifies (1.B) the kinds of being and of unity and (1.C) the *per se* attributes of being and of unity. He does not specify the kinds and the *per se* attributes of the opposites of being and unity, i.e., of non-being and multiplicity, but presumably the kinds of, e.g., non-being are the opposites of the kinds of being; that is to say, since the kinds of being are the ten categories, the kinds of non-being would be not-substance, not-quality, not-quantity etc. for each of the ten categories. Likewise, the kinds of multiplicity should be the opposites of the kinds of unity; since the kinds of unity are unity as an individual, unity in species etc., the kinds of multiplicity would be multiplicity of individuals, multiplicity in species etc. It seems to be possible to make similar inferences about the *per se* attributes of non-being and multiplicity as well. I will say more about the kinds and the *per se* attributes of being and of unity below when the argument calls for them. I just want to note here that what appears to be presented as a group of things studied by ontology separate from the kinds and *per se* attributes of being and unity in T1 is presented among the *per se* attributes of being in T5. As al-Fārābī states in T1 (1.d), ontology studies also “the things which are not attributed to each and every one of the subjects of the particular sciences specifically, like priority, posteriority, potentiality, actuality, the perfect, the deficient, and whatever is in this way.” However, when he gives examples of the *per se* attributes of being in T5 (1.C), he mentions “potentiality, actuality, perfection, deficiency, cause, and the effect.” Al-Fārābī does not present these lists as exhaustive of the relevant features, and Aristotle explicitly counts priority

⁹⁷ “and the parts [*aqsām*] of each one of these” in T5 (1.B), meaning the parts of each kind (*nawʿ*) of unity and of being.

and posteriority among the *per se* attributes of being at *Met.* Γ.2 1005a16. As we will see below, it is an understandable reading of *Met.* Δ that Aristotle conceived of *Met.* Δ *primarily* (though perhaps not entirely) as a disambiguation and analysis of the senses of the terms that also denote the opposites, the kinds, and the *per se* attributes of being and unity; at any rate, al-Fārābī seems to have read *Met.* Δ in this way.⁹⁸ As I detail below, according to this interpretation, *Met.* Δ would be the place where the ontology part of metaphysics is developed in the first place.⁹⁹

Let me summarize what I have presented so far. The universal science, or metaphysics, has two parts. The ontology part studies being and unity and their opposites non-being and multiplicity, as well as their kinds and their *per se* attributes. The theology part of the universal science studies the things which are separated from matter in reality (not only in imagination like the mathematical objects); these are the principles of lower beings. Among these things separated from matter, theology also studies the ultimate principle of everything, God. I also briefly suggested, based on the passages from the *Metaphysics* that are behind al-Fārābī's *On the Aims* that ontology seems to serve theology; we want to find the ultimate principles of beings not insofar as they have their particular natures but insofar as they are beings, and for this purpose we study the features that are shared by all beings, not the features that are shared only by some of them by virtue of having a particular nature. Right after T5, and before al-Fārābī concludes his discussion of the aim or the subject-matter (*skopos*) of the universal science as a whole and moves into the discussion of the aims of the individual books of the *Metaphysics*, he makes some remarks that seem difficult to put under the theology or the ontology parts of metaphysics.

T6 *On the Aims* 36.17-19

ثم في مبادئ كل واحد من هذه فينشعب¹⁰⁰ ذلك وينقسم إلى أن يبلغ إلى¹⁰¹ موضوعات العلوم الجزئية فحينئذ¹⁰² ينتهي هذا العلم وتتبين فيه مبادئ جميع العلوم الجزئية وحدود موضوعاتها

⁹⁸ See Footnote n.282 below in Section 6.

⁹⁹ See especially Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ for how *Met.* Γ.1-2 informs the choice of the terms discussed in *Met.* Δ, at least a core set of them, and for an outline of how *Met.* Γ.1-2 and *Met.* Δ served al-Fārābī in his understanding of the opposites, the kinds, and the *per se* attributes of being and unity as we find them in T1 and T5 in *On the Aims*.

¹⁰⁰ Dieterici: وينشعب.

¹⁰¹ Dieterici: إلى.

¹⁰² Dieterici: و.

[1] Next, [the universal science investigates] the principles of each one of these [*hādhihi*] and [2] that [*dhālika*] branches out and is divided until it reaches the subjects of the particular sciences; at that point this science terminates while the principles of all the particular sciences and the definitions of their subjects are made clear [*tatabayyanu*] in [this science].

First of all, it is not clear what the pronoun “these [*hādhihi*]” refers to in (1). In the preceding passage, al-Fārābī talked about what ontology studies: being, unity, non-being, multiplicity, their kinds and their *per se* attributes. So, the pronoun “these” could refer to some or all of the things studied by ontology. Whether the pronoun refers to all the things studied by ontology or some of them, it is not entirely clear which principles the universal science studies as we are told in (1). It could perhaps be those principles that are studied by theology. As we will see more about this below, al-Fārābī thinks that this science also makes clear the principles like the principle of non-contradiction that are shared by all the sciences. The principles of each or every (*kull*) one of these might also refer to such principles shared by all the sciences. In any case, it is hard to make out exactly what principles al-Fārābī means in this obscurely terse clause. The trouble with the pronouns continues in (2). It is not clear what the demonstrative pronoun “that [*dhālika*]” refers to. We are told that “that branches out and is divided until it reaches the subjects of the particular sciences” and this is the lower boundary of the universal science, as it were, because from then on, we are firmly in the realm of the particular sciences. If we think about the subjects of the particular sciences, we would realize that various natural sciences study corporeal substances and their *per se* attributes, including the psychological phenomena insofar as they are considered with matter;¹⁰³ mathematical sciences study the kinds of quantity and their *per se* attributes; these are the theoretical sciences in Aristotle, but if we follow al-Fārābī and also consider political science (*al-‘ilm al-madanī*) as a theoretical science (i.e., the theoretical study of what human perfection or happiness consists in and how it can be achieved and what prevents it from being achieved on account of the right or wrong organization of their political body (*madīna*)), political science also concerns itself with the human soul and the bodies and what is in the bodies insofar as they are objects of voluntary action.¹⁰⁴ In short, it appears that “that,” i.e., the universal science branches out and is divided into the particular sciences as the subject of the universal

¹⁰³ See, for example, *Met.* E.1 1026a5-6.

¹⁰⁴ More on political science, see Sections 4 and 5 below.

science, being, is divided into substance, quantity, and the other categories, (and also unity and the others are divided into their kinds) which, along with their *per se* attributes, ultimately constitute the subjects and the principles of the particular sciences.¹⁰⁵

Finally, al-Fārābī suggests in T6 (2) that as we trace how the universal science branches out and is divided into the particular sciences, we also see that “the principles of all the particular sciences and the definitions of their subjects are made clear [*tatabayyanu*] in [this science, i.e., metaphysics].” I want to emphasize that making clear the definitions of the subjects of the particular sciences would involve more than simply saying, e.g., that quantity is divided into discrete quantity and continuous quantity, and the former is the underlying subject of arithmetic while the latter is of geometry. Moreover, “the principles of all the particular sciences [*jamī‘ al-‘ulūm al-juz‘iyya*]” could be the principles of all the particular sciences collectively, i.e., the principles shared by all the particular sciences, or it could be the sum of the principles of all the particular sciences distributively, i.e., the proper principles of mathematics + the proper principles of meteorology etc. In either case, we are told that metaphysics also makes clear the principles of the particular sciences, either the principles shared by them all, or the sum of the principles specific to each particular science.

I am not sure about what principles al-Fārābī talks about in T6 (1), but I think we can get clearer on what he means in T6 (2). It will become clear that there are two interpretations of this clause supported by two different accounts of the subject-matter of metaphysics and how it relates to the principles of the other particular sciences. According to one, most clearly presented in al-Fārābī’s *Enumeration of the Sciences*, there is a third part of metaphysics that is clearly distinguishable from the theology and the ontology parts in its subject-matter. In this part, metaphysics presents a dialectical exposition and defense of the principles of the other, particular, sciences. For want of a better term, I call this part of metaphysics *the groundwork for the particular sciences*, or *the groundwork* in short. According to the second account, most clearly presented in the *Book of Demonstration*, metaphysics only has the ontology and the theology parts, but prior sciences demonstrate some principles of the posterior sciences, and metaphysics, being a science prior to all the particular sciences, demonstrates some of their principles (that said, posterior sciences also demonstrate some principles of the prior sciences, so some principles of metaphysics are

¹⁰⁵ I say more about the subject and the principles of a science below.

demonstrated by the particular sciences too). According to this second account, there is no third part of metaphysics whose subject-matter can be clearly distinguished from the subject-matters of ontology and theology; rather, in the demonstrative network of the sciences, some sciences demonstrate some principles of some other sciences, and metaphysics is also related to the particular sciences in these ways. So according to this second view, we can perhaps talk about the groundwork *function* and not a groundwork *part* of metaphysics with respect to the particular sciences, but to repeat, such a function is not peculiar to metaphysics. In the following two sections, I will present these two accounts of the subject-matter of metaphysics and how metaphysics relates to the principles of the other sciences primarily from the *Enumeration of the Sciences* and the *Book of Demonstration* in that order. In doing so, I will also talk about the likely sources in Aristotle behind these accounts, but first, I will present briefly al-Fārābī's account of the principles of a science in his *Book of Demonstration* that builds on mainly *APo* I.10 (along with I.7, I.11, and I.28) that informs both accounts of how metaphysics relates to the principles of the other sciences.

Section 2: The subject-matter of metaphysics in the *Enumeration* and the groundwork part

To put it briefly, according to *APo* I.10 76a31-b22, a principle of a science is assumed and not demonstrated in that science, but other things are demonstrated from the principles. There are common and proper principles of a science. The common principles are shared by more than one science, like the principle that “if equals are subtracted from equals, the remainders are equal” (76a41). The proper principles posit that the underlying subject of the science exists (responding to the “whether it is” (*ei esti*) question) and its definition (responding to the “what it is” (*ti esti*) question); they also posit what the *per se* attributes of the science are. Using these, the science demonstrates the existence of the *per se* attributes (i.e., that it belongs to some genus (*APo* I.7

75a41-2)).^{106 107} Although Aristotle does not specify with an example from an actual science how this schema is supposed to fit into the way actual sciences present their findings, he seems to have in mind something like this: in arithmetic, we assume some general principles like the Common Notions in Euclid's *Elements* that hold good in other sciences too. Next, we assume what a number is (subject), what even is, and what prime is (*per se* attributes). Then we assume the 'existence' of numbers; this assumption presumably means not only the assumption that individual numbers like two, three etc. exist but also the assumptions that the sum of two numbers is a number, a multiple of a number is a number, the successor of a number is a number etc. (analogous to the 'existence' postulates for geometry, i.e., Postulates 1-3 in Euclid's *Elements*). Finally, using all these, we try to show the 'existence' of a *per se* attribute, say even, i.e., that even belongs to a class of numbers (say, the sum of two prime numbers greater than 2 is even).¹⁰⁸

¹⁰⁶ This picture where the definitions of both the subjects and the *per se* attributes are simply assumed and not demonstrated in that science gets a bit complicated in *APo* II. Discussing all the details would take me too far from my current purpose but to put it briefly, it seems that the conclusion of Aristotle's discussion of whether the definitions can be shown or not as stated in *APo* II.9-10 is that if X has a middle term, i.e., that it has a cause different from it so that there is a further answer to the question of why it is, to define X, i.e., to answer what X is (what thunder is), we must answer why X is (why it thunders). For this purpose, we start by assuming its nominal definition (thunder is a noise in the clouds), using the nominal definition, we transform the one-place question of why X is into a two-place question of why A is B (why is there noise in the clouds); using the nominal definition, we ascertain that X exists (there is noise in the clouds (regularly)), finally using some sort of reasoning (e.g., abductive reasoning), we find the cause of X, i.e., we answer the question of why X is = why A is B (because of the extinction of fire), and this gives us the real definition of X (i.e., the definiens of thunder according to its real definition = noise in the clouds due to the extinction of fire). There is no demonstration of what X is, strictly speaking, but the reasoning used to answer the question of why X is can be expressed in the form of a demonstration (noise belongs to that in which fire is extinguished; that in which fire is extinguished belongs to the clouds; therefore, noise belongs to the clouds; the middle term of this syllogism is the cause of why thunder exists and the conclusion of this syllogism 'presents' the nominal definition (i.e. definiens) of thunder). In this sense, Aristotle says that the real definition of X "is clearly a sort of demonstration [*hoion apodeixis*] of the *ti esti*, while differing from a demonstration in position [*tē(i) thesei*]" (*APo* II.10 94a1-2). If X does not have a middle term, i.e., the cause of why X is is the same as itself, i.e., it is a brute fact that X exists (as the sort of thing it is), in these cases we simply assume (*hupothesthai*) both that X exists as well as what X is, "or one must make them clear [*phanera*] in some other way, which is precisely what an arithmetician does; he assumes both what the unit is as well as that it exists" (*APo* II.9 93b21-5). Given Aristotle's examples here, the things with a cause distinct from themselves seem to be the *per se* attributes (e.g., eclipse, thunder), while the things without a cause distinct from themselves seem to be the subjects of sciences (e.g., unit in arithmetic).

¹⁰⁷ It appears that to the principles of a science, *APo* I.28 adds also the parts of the genus. This seems to be ultimately behind al-Fārābī's addition of the species of the underlying genus to the components of the principles of a science. More on this, see below.

¹⁰⁸ Most proofs in ancient mathematical sciences involve relations and how the inferences involving relations are to be represented using syllogistic forms beats me, but the 'spirit' of Aristotle's schema of a demonstrative science seems to be along the lines of what I suggested.

This is the basic picture that informs al-Fārābī's account of how a demonstrative science is structured. He explains in the *Book of Demonstration*¹⁰⁹ v.4 59-62 that theoretical arts (*ṣinā'a*), as he calls them in this passage, or theoretical sciences (*'ulūm*), as he calls them in other places,¹¹⁰ are composed of three things: subjects (*mawḍū'āt*), problems (*masā'il*), and principles (*mabādi'*). The subject of a science is the underlying genus (e.g., numbers for arithmetic) about which this science demonstrates (*yubarhinu*) its problems, ultimately from the principles which are the premises/propositions (*muqaddima = protasis*) not demonstrated but simply assumed in this science. The subjects and the predicates of a problem are taken from the subject of this science, or the results of the (potentially multiple) applications of the 'kind of' and 'per se attribute of' operations on the subject of the science (e.g., a *per se* attribute of a kind of the subject; for the exact list, see p.60 lines 8-11).

On p. 60-62, al-Fārābī presents a detailed discussion of the principles, or the primary principles (*al-mabādi' al-uwal*) as he calls them here, of a science. A principle of a science could be a proper (*khāṣṣ*) principle or a shared (*mushtarak*) principle. A shared principle could be shared by a few sciences, or it could be shared by every science. Both the subject and the predicate of a proper principle "are related [*yunsabu*] to the subject of the art [=science] in one of the ways mentioned before" (60 lines 17-8). Al-Fārābī specifies these earlier (p.59 line 15- p.60 line 2): "the things which relate to the subject of the art are of three classes: first, the things which are taken in the definitions of the subjects, second, the kinds of the subjects, and third, the *per se* attributes of these subjects." An example of a proper principle of arithmetic is that "five is an odd number" (60 line 18) where five is a kind of the subject of arithmetic, number, and odd is one of its *per se* attributes. Although al-Fārābī does not state this explicitly in these passages, presumably he would also consider the definitions of the kinds and of the *per se* attributes of the subject of a science among the proper principles of that science.

A shared principle is either so because exactly one of its subject or predicate is not taken from these things which relate to the subject of the science, or the principle is shared because both of its subject and predicate are not taken from these things which relate to the subject of the science.

¹⁰⁹ For my discussion of *Kitāb al-Burhān*, I occasionally consulted its Turkish translation: Al-Fārābī, *Kitābu'l-Burhān*, trans. Ömer Türker and Ömer Mahir Alper (Istanbul: Klasik, 2012).

¹¹⁰ Al-Fārābī either uses "art [*ṣinā'a*]" and "science [*'ilm*]" interchangeably in this work, or "art" is the more general term comprising also the sciences.

An example of the latter is that “things which are equal to one thing are equal to each other” (60 lines 20-1).¹¹¹ An example of a principle which is shared only by virtue of its predicate is that “the two things which coincide [*al-munṭabiqān*] are equal to each other.”¹¹² The subject of this principle is proper to geometry because “coinciding belongs only to magnitudes [*maqādir*]¹¹³ but equality belongs to numbers and to magnitude together [*li- ‘izām jamī’an*]¹¹⁴” (60 lines 21-22).¹¹⁵

¹¹¹ Euclid Elements Common Notion 1.

¹¹² Euclid Elements Common Notion 4.

¹¹³ *Miqdār* = *megethos*. See, for example, the Arabic translation of Book V definition 1-2: al-Ṭūsī’s paraphrase: متى قدر أصغر المقدارين أعظمهما فهو جزؤه والأعظم ذو أضعافه (Euclid and Al-Ṭūsī, *Hādhā Kitāb Uqlīdis, Tahrīr al-Ṭūsī (This Is Euclid’s Book, al-Ṭūsī’s Recension)* (Istanbul: Dār al-Ṭibā’a li-Dawla al-‘Aliyya al-‘Uthmāniyya, 1216 1801-1802), 76). *Miqdār* is used in this sense in al-Fārābī’s *Commentary on the Beginning of Elements V* too (see p.205-207 in Freudenthal).

¹¹⁴ *‘Izām* is used for *megethos* in the Arabic translation of *Met. Δ.13* (on quantity) in the sense of continuous quantity comprising extension in one dimension, in two dimensions, and in three dimensions (which are lines, surfaces, and solids, if they are determinate) (see, e.g., 594.5 where *megethos* is translated as *‘izām*). Talking about the mathematical sciences, al-Fārābī also says that they study number (*‘adad*) and magnitude (*‘izām*) on p.129 of his *Attainment of Happiness*. Al-Fārābī contrasts his view with those who produce the *a’zām* from points in *KW 42*. Also, a bit below in the *Book of Demonstration*, al-Fārābī talks about the universal and the particular science, and as examples of the subjects of particular sciences, he mentions number and magnitude (*‘izām*), where apparently one is the subject of arithmetic and the other of geometry (62 lines 4-5). Also, in the *Book of Demonstration*, talking about two different particular sciences making demonstrations about the same thing, al-Fārābī gives the example of equality being demonstrated for numbers and magnitudes (*a’zām*) where the implication is that these two particular sciences are arithmetic (studying numbers) and geometry (studying magnitudes) (67 lines 1-2). So, it is likely that al-Fārābī uses *miqdār* and *‘izām* interchangeably as technical terms translating *megethos* in the sense of continuous quantity. That said, it also seems a bit out of al-Fārābī’s style to use two different terms for the same idea in the same sentence for stylistic variation at the cost of a potential misunderstanding. So, I think it is also possible that al-Fārābī might mean something general by *‘izām* here that comprises both numbers, and magnitudes and other quantities, if there are any (it appears in *Met. Δ. 13* account that strictly speaking the only determinate discrete quantity is number and the only determinate continuous quantities are line, surface and solid, but the *Categories 6* account of quantity lists more discrete and continuous quantities). Al-Fārābī also says in his *Commentary on the Beginning of Elements I* (p.188 clause n.63 in Freudenthal) that “the geometrician calls the extension [*al-imtidād*] length [*al-ṭūl*] and makes it an *‘izām* shared by the solid, the surface, and the line;” *‘izām* here could simply mean the continuous quantity, or it might also indicate quantity in a broader sense. But beyond this passage, there might be a more general terminological basis for al-Fārābī to use *‘izām* in this broader sense of quantity. The ‘greater than’ (= “*meizon*”) relation is expressed in the Arabic translations of the *Elements* by the relative *a’zām*: see, e.g., CN 5: والكل أعظم من الجزء (both in the Uppsala ms. (3r2-3) (available at <https://www2.hf.uio.no/polyglotta/index.php?page=volume&vid=67> accessed April 2, 2024) and in al-Nayrīzī in Part 1 on p.28 (Euclid, Al-Ḥajjāj, and Al-Nayrīzī, *Codex Leidensis 399,1: Euclidis Elementa ex Interpretatione al-Hadschdschadschii cum Commentariis al-Narizii: Arabice et Latine Ediderunt Notisque Instruxerunt*, ed. R. O. Besthorn and J. L. Heiberg (Copenhagen: Gyldendal, 1897-1905); by contrast, al-Ṭūsī’s paraphrase has من جزئه (p.4)). It is possible that al-Fārābī used *‘izām* in the *Book of Demonstration* passage under consideration to express that property which grounds the relations of ‘equal’ and ‘greater than’. According to this idea, any two things which can be compared in terms of their *‘izām* must be either equal to each other (*mutasāwīyān*) or one must be greater (*a’zām*) than the other. In Euclid as well as in al-Fārābī, such a comparison is done among homogenous quantities (*mutajānis*).

¹¹⁵ Proclus’ commentary on *Elements I* might be behind al-Fārābī’s claim that CN1 is a shared principle by virtue of both its subject and predicate, while CN4 is a shared principle only by virtue of its predicate: speaking about axioms generally, Proclus says: “... we note that some of them are peculiar to arithmetic, some peculiar to geometry, and some common to both. That every number is measured by the number one is an arithmetical axiom; to geometry belong the principles that two equal straight lines will coincide with each other and that every magnitude can be divided indefinitely; but that two things equal to the same thing are equal to each other, and similar axioms, are

Al-Fārābī adds that a shared principle can be used generally (*isti 'māl 'āmm*), i.e., as it is, or it can be used specifically (*isti 'māl khāṣṣ*), i.e., as adapted to the proper terms of the science. The details of this issue are not important for my current purpose. I just want to note that as examples of the shared principles used specifically, al-Fārābī discusses the common mathematical principle that two things which are equal to the same thing are also equal to each other and he also discusses the logical principles of the law of excluded middle and the principle of non-contradiction.¹¹⁶

In short, al-Fārābī's examples of the shared principles are either the common mathematical principles or the logical principles. This is not coincidental. As I mentioned above, in his discussion of the principles of a science in *APo* I.10, which is also al-Fārābī's main source in the account summarized above, as an example of a common principle (*to koinon*), Aristotle mentions the principle that “if equals are subtracted from equals, the remainders are equal” (76a41). Just like the two common mathematical principles al-Fārābī uses as his examples of common principles, Aristotle's example is also a Common Notion in Euclid's *Elements* (CN 3). Also, as examples of common principles (*ta koina*) in *APo* I.11, Aristotle repeats CN 3, and he also mentions the law of excluded middle (77a30-31).¹¹⁷

In *Met.* Γ.3, Aristotle argues that the investigation (*skepsis*) about “the things which are called axioms [*axiōmata*] in mathematics” belongs to the science which is developed in his *Metaphysics* (1005a19-b5). Aristotle calls the common principles “axioms [*axiōmata*]” in *APo* (e.g., I.7 75a41-2, I.10 76b14). In addition to the common principles in mathematics, Aristotle argues in the rest of Γ.3 that it belongs to this science to investigate (*episkepsasthai*) “the deductive principles [*tōn sullogistikōn archōn*],” i.e., the logical principles.¹¹⁸ He mentions the

common to both sciences.” (Quoted from Glen R. Morrow's translation in Proclus, *A Commentary on the First Book of Euclid's Elements: Translated with Introduction and Notes*, trans. Glen R. Morrow (Princeton University Press, 1970), 144). I could not find anything relevant in al-Nayrīzī's commentary on the Common Notions, but the commentary attributed to Simplicius that al-Nayrīzī also draws on might have had a point even closer to al-Fārābī's than the passage from Proclus I quoted.

¹¹⁶ As he puts it, لا يمكن أن يصدق على الشيء الإيجاب والسلب معا والشيء إما أن يصدق عليه الإيجاب أو السلب (61 lines 8-9).

¹¹⁷ The law of excluded middle is called a common principle also at *APo* I.32 88a36-b1.

¹¹⁸ Stephen Menn pointed out to me that there is another interpretation of the beginning of Γ.3. As I pointed out above, it is implied that metaphysics also studies “the things which are called axioms in mathematics [*peri te tōn en tois mathēmasi kaloumenōn axiōmatōn*]” (1005a19-20). I propose that this refers to the undemonstrated common principles of mathematics, like the Common Notions in Euclid's *Elements*, but perhaps what Aristotle means is that metaphysics studies some things and the things of this sort are called *axiōmata* in mathematics; in other words, metaphysics studies some undemonstrated common principles, and the mathematicians call (their) undemonstrated common principles *axiōmata*. I think that the first interpretation presents a more natural reading of this clause in

principle of non-contradiction in $\Gamma.3$ (1006a19-22), and he says that “everyone who demonstrates something refers back to this as an ultimate belief [*eschatēn doxan*], for this is by nature the principle of all the other axioms” (1005b32-4). He defends the principle of non-contradiction in the following chapters of Γ , and in $\Gamma.7$, he also introduces a defense of the law of excluded middle. The common mathematical principles are not discussed in Γ . So, we do not know exactly what Aristotle means by their *skepsis* as part of metaphysics. However, we can see what he means by such an investigation, as he pursues in the rest of Γ (i.e., chapters 4-8) his claim that this science should also investigate (*episkepsasthai*) the logical principles: Aristotle presents a dialectical exposition and defense of these logical principles by spelling out what these principles entail and defusing the worries raised about their certainty by other philosophers and by showing his readers the unacceptable consequences that would follow if these principles were rejected.

So, Aristotle argues in $\Gamma.3$ that metaphysics also investigates the mathematical and the logical common principles, and in the rest of Γ he actually carries on such an investigation of the logical principles, which amounts to a dialectical exposition and defense of them. It is possible to read *Met. E.1* as suggesting that Aristotle argues that metaphysics makes clear also the proper principles of the particular sciences. This argument is presented close to the beginning of the chapter and not all the details in it are clear. As I mentioned above, Aristotle begins the chapter by saying that the science developed in the *Metaphysics* studies the principles and causes of beings *qua* being. Every science studies the principles and causes of its subject but this science differs from the particular sciences in that the particular sciences study a particular realm of being. More precisely, a particular science sets aside (*perigraphesthai*) some genus as its subject, and although it “do[es] not give an account [*outhena logon poiountai*] of the what it is [*ti esti*],” from the *ti esti*, it “demonstrate[s] the *per se* attributes of the genus that they concern.” Instead of giving an account of the *ti esti*, some of the particular sciences make the *ti esti* clear (*dēlon*) by perception, while others simply assume it as a hypothesis (1025b7-13). If we remember the

isolation, but the advantage of the second interpretation is that it explains why Aristotle seamlessly transitions into the discussion of the logical principles in the rest of this chapter as if he still discusses the same topic and the rest of *Met. Γ* addresses only the logical principles and does not say anything about the mathematical common principles. Also, $\Gamma.3$ in its entirety seems to present the beginning of Aristotle’s response to the second aporia of *Met. B* which turns on the question of whether this science which studies principles of substance also studies “the principles from which everyone demonstrates [*deiknousi*], like whether it is possible both to assert and deny one and the same thing and about other things of this sort” (initially presented at B.1 995b6-10, developed later at B.2 996b26-7a15). The K.4 version of this aporia seems more ambiguous as to whether the common mathematical principles are also counted among “the principles from which everyone demonstrates” as it is put in B.1.

schema of a demonstrative science sketched out in *APo* I.10 summarized above, we can get a better sense of what Aristotle means here. The claim in the E.1 passage under consideration is that the particular sciences do not demonstrate the *ti esti*, i.e., the definitions, but simply assuming them or making them clear in a way other than demonstration, they proceed from them and make demonstrations about the *per se* attributes of the underlying genus. According to the *APo* I.10, the principles of a science are divided into the common and the proper principles. There does not seem to be any mention of the common principles in the E.1 passage. As for the proper principles, *APo* I.10 mentions the assumption of the definition of the subject, the existence of the subject, and the definitions of the *per se* attributes. The *ti esti* in this passage seems to refer to the definition of the subject primarily if not exclusively, but perhaps it also includes the definitions of the *per se* attributes. The assumption of the existence of the subject genus is not mentioned so far, but it is mentioned in the following passage:

T7 *Met.* E.1 1025b14-18

[1] διόπερ φανερόν ὅτι οὐκ ἔστιν ἀπόδειξις οὐσίας οὐδὲ τοῦ τί ἐστιν ἐκ τῆς τοιαύτης ἐπαγωγῆς, ἀλλὰ τις ἄλλος τρόπος τῆς δηλώσεως. [2] ὁμοίως δὲ οὐδ' εἰ ἔστιν ἢ μὴ ἔστι τὸ γένος περὶ ὃ πραγματεύονται οὐδὲν λέγουσι, διὰ τὸ τῆς αὐτῆς εἶναι διανοίας τό τε τί ἐστι δῆλον ποιεῖν καὶ εἰ ἔστιν.¹¹⁹

[1] For this reason, it is clear from this sort of induction that there is no demonstration of the substance,¹²⁰ nor of the *ti esti*, but there is another way of making it clear [*dēlōsis*]. [2] And similarly, [the particular sciences] do not say anything to account for [*ouden legousi*] whether the genus that their investigation concerns [*peri ho pragmateuontai*] exists or not [*ei esti ē mē esti*], because it belongs to the same *dianoia* to make clear the *ti esti* as well as the *ei esti*.

¹¹⁹ In Ustāth's translation (in *Long Commentary*, 698.5-8): ولذلك هو بيّن مما يتلو [يتلوا B] هذا القول أنه ليس للجوهر برهان ولا لما هو بل دلالة أخرى بنوع ما وكذلك أيضا لا يخبر البتة إن كان الجنس الذي يستعمله ولا إن لم يكن وذلك أنه لفكرة واحدة تبين ما هو وهل هو.

¹²⁰ I presume that “substance [*ousia*]” here is used to mean the same thing as the following “*ti esti*.” Aristotle mentions “*ousia*” here possibly because he wants to make the connection between his claims here with the 5th aporia of *Met.* B: whether metaphysics studies only substance (which seems to mean being in general in the context of this aporia or maybe also kinds of being) or also its *per se* attributes (initial statement: B.1 995b18-27, further elaboration: B.2 997a25-34, the Kappa version: K.1 1059a29-38). It would take me far from the purpose of this dissertation to fully spell out this aporia and Aristotle's answer to it but as I will briefly touch upon in connection with the *ti esti* of the particular sciences in the following, it seems reasonable to me that Aristotle's answer to this aporia is a qualified yes: metaphysics does not *demonstrate* the *ousia* (i.e., what being is and perhaps also what various kinds of beings are), but it gives an account of it.

The existence of the subject is mentioned in (2) and I will come to that, but first let me clarify what (1) in this passage adds to Aristotle's previous claim about the *ti esti* because he clearly presents (1) as a consequence of the previous claims (this clause starts with a *dioper*). Recall that the particular sciences do not give an account of (*logon poieisthai*) the *ti esti* but rather they make it clear by perception or simply assume it. Aristotle claims in (1) based on an induction from observing this condition about the particular sciences that we cannot demonstrate the *ti esti* of the particular sciences but there is another way of making them clear. So, no science demonstrates the *ti esti* of the particular sciences. The particular sciences make their *ti esti* clear by perception or they simply assume it. The particular sciences do not give an account of their *ti esti*. There is no strong reason to assume in this passage that giving an account (*logon poieisthai*) simply means demonstration (*apodeixis*). If not, there arises the question of whether some science other than the particular sciences can give an account of the *ti esti* of the particular sciences, though without demonstrating them. This seems to be confirmed in T7 (2). Aristotle adds in (2) that a similar situation about *ti esti* also holds of the *ei esti*. He says that the particular sciences "do not say anything to account for [*ouden legousi*]" what is the underlying genus nor whether the underlying genus exists.¹²¹ "Not saying anything to account for" is an over-translation of "*ouden legein*" but I wanted to bring to the reader's attention that "*ouden legein*" here is used in a very similar context as "*outhena logon poieisthai*" above, which I translated as "not giving any account of." In both cases, the particular sciences are said to fail to give an account of or present an argument about *ti esti* in the former passage, and both *ti esti* and *ei esti* in this passage. Aristotle adds in T7 (2) that the particular sciences fail to give an account of the *ti esti* and the *ei esti* of the underlying genus "because it belongs to the same *dianoia* to make

¹²¹ Recall that I suggested above that in the passage preceding T7, by *ti esti* Aristotle seems to refer to the definition of the underlying genus only, and not also the definitions of its *per se* attributes. If that is the case, the account of the principles of a science in E.1 would be lacking compared to that account in *APo* I.10. In (2) of T7, Aristotle explicitly talks about what is the underlying genus and whether the underlying genus exists, and does not mention the *per se* attribute, but even from the perspective of *APo* I.10, he is justified not to mention the *per se* attribute along with the underlying genus in (2) of T7 which talks about assuming *both* the *ti esti* and the *ei esti*, because according to *APo* I.10, the definition (*ti esti*) of the *per se* attribute is assumed but its existence (*ei esti*) is demonstrated.

As I pointed out in Footnote n.106 above, Aristotle's account of the definitions (*ti esti*) in *APo* II is more detailed and in particular, Aristotle makes a distinction between the *ti esti* of immediate things, i.e., things without a cause distinct from them, and the *ti esti* of the mediate things, i.e., things with a cause distinct from them. I suggested in that footnote that according to Aristotle's examples, it seems that the former group comprises the subjects of sciences, while the latter group comprises the *per se* attributes. That distinction might be relevant here for why Aristotle explicitly talks about the *ti esti* of the subjects but not of the *per se* attributes.

clear the *ti esti* as well as the *ei esti*.” If Aristotle’s point was *only* that the particular sciences cannot demonstrate the *ti esti* and the *ei esti* of its underlying genus, but they can make them clear by perception or they can simply assume them, it would be strange for Aristotle to call perception or simple assumption a *dianoia*. *Dianoia* implies some sort of reasoning, and the simple cognitive acts of perception or mere assumption would fall short of it. Just a few lines above towards the beginning of E.1, Aristotle asserts that “every *dianoetic* science, or a science partaking of *dianoia*” investigates some causes and principles (1025b6-7) and this is how he bridges his contrast between the universal science which studies the causes and principles of being *qua* being and the particular sciences which study the causes and principles of some particular realm of being; so *dianoia* is a distinctive component of the sciences under consideration in E.1, be it a universal or a particular science. Confirming this, Aristotle states a bit below at 1025b25 classifying sciences and arts that “every *dianoia* is either practical or productive or theoretical.” So natural science, mathematics, and metaphysics (or theology) that dominate the rest of the discussion in E.1 are theoretical *dianoia*. They are called *dianoia* not because of their peripheral activity of assuming their principles or illuminating their principles by perception, but because of their core activity of making inferences to explain the relevant phenomena. So it seems that Aristotle’s claim in T7 (2) that “it belongs to the same *dianoia* to make clear the *ti esti* as well as the *ei esti*” entails that there is some reasoning about the *ti esti* and the *ei esti* of the particular sciences.¹²² As Aristotle said before, the particular sciences cannot deliver such a reasoning; they are not capable of giving an account of the *ti esti* and the *ei esti* of their underlying genus. So it seems that the universal science gives an account of the *ti esti* and the *ei esti* of the underlying genus of the particular sciences.¹²³ Since E.1 is about the universal

¹²² I am emphasizing that these sciences are called *dianoia* insofar as they involve reasoning, because someone might think that when Aristotle says “it belongs to the same *dianoia* to make clear the *ti esti* as well as the *ei esti*” he simply means that it belongs to that very particular science to ‘make clear’ the *ti esti* as well as *ei esti* of its underlying genus where ‘making clear’ would mean simply assuming or making clear through perception. If Aristotle wanted to say this simply, I would expect him to use “particular science” directly instead of a roundabout expression with “*dianoia*.” Also, if Aristotle’s whole point here was that the principles of the particular sciences are made clear by perception or are simply assumed by those particular sciences, and if these claims had nothing to do with the universal science, this whole discussion of the *principles* of the particular sciences in the midst of the discussion of the subject-matter of the universal science in contrast with the particular sciences would be a complete digression. I admit neither of these considerations is a knock-down argument, but they come together in favor of the interpretation I propose. So, I think that the mention of “*dianoia*” in the clause under consideration indicates something about the relevant ‘making clear’ i.e., that this ‘making clear’ involves reasoning and is not through perception alone or it is not simple assumption.

¹²³ Maybe also the *ti esti* of their *per se* attributes but see Footnote n.121 above.

science in general, and the differences between the universal science and the particular sciences, it would make perfect sense for Aristotle not to refer to some *dianoia* obscure to the context of E.1 when it comes to making clear or giving an account of *ti esti* and *ei esti* of particular sciences, but to claim that this is undertaken by the universal science.

As I briefly mentioned above, Aristotle presents a dialectical exposition and defense of the logical principles in Γ.4-8. It stands to reason that the “giving an account of” he talks about in E.1 which involves reasoning but is short of a full-on demonstration¹²⁴ is some sort of a dialectical exposition and defense. In short, if the account I presented above is correct, Aristotle seems to propose that the universal science provides dialectical exposition and defense of both the common as well as the proper principles of the particular sciences. At the very least, it is understandable why someone would read these passages in this way.¹²⁵ Recall that in T6 (2) of

¹²⁴ Aristotle seems to confirm that there is no science which is “*kuria*” over all the particular sciences and *demonstrates* their proper principles at *APo* I.9 76a16-25. This is because, as Aristotle argues, the proper principles of a science are proper to the genus which is the subject of this science, but demonstration does not fit (*epharmottei*) to a different genus; so insofar as two sciences have two different genera as their subjects, one cannot demonstrate the proper principles of the other. The only exception Aristotle mentions in this passage where one science demonstrates things belonging to a genus other than its subject genus is when the demonstrations in a superior science (e.g., geometry) fit to the demonstrations in a subordinate science (e.g., optics), and as Aristotle explains right above (76a4-15) this happens as the subordinate science demonstrates the ‘*that*’ (*hoti*) about something while the superior science demonstrates the ‘*why*’ (*dioti*) about the same thing. I do not see any clear indication in *APo* or in *Met.* that Aristotle takes the relation between the science of metaphysics to mathematics and natural science to be like the relation of, e.g., geometry to optics in the relevant ways so that metaphysics is a superior science and mathematics and natural science are subordinate sciences in the relevant way. More on the superior and subordinate sciences and how al-Fārābī understands the relation between metaphysics and the particular sciences along these lines, see Sections 3 and 5 below.

¹²⁵ See also *Top.* I.2 101a36-b4, where Aristotle says that one of the benefits of this discipline or treatise (*pragmateia*), i.e., dialectics or the *Topics* is that this discipline or treatise is also beneficial “in relation to the primary [components] [*ta prōta*] of every [*hekastēn*] science. For from a given science’s own principles [*tōn oikeiōn archōn*], it is not possible to give any account of them [*eipein ti peri autōn*] since the principles are prior [*prōtai*] to all of them, but it is necessary to go through them in detail [*dielthein*] with the *endoxa* about each. This is proper [*idion*] or appropriate [*oikeion*] most of all to dialectics. For since [dialectics] is capable of examination [*exetastikē*], it paves the way for [*hodon echei pros*] the principles of all the inquiries [*methodōn*].” There are some difficulties about the interpretation of this passage, but generally speaking, this passage suggests that dialectics does the job of “giving an account of [*eipein ti peri*]” the principles of each science or all the sciences through the *endoxa* about them because these sciences cannot give an account of their own principles. If Aristotle’s perception of what dialectics is capable of achieving shifted at some point and he came to think that either it does not belong to dialectics to justify the principles of the sciences or that there is a better way of justifying the principles of the sciences than how dialectics does it, it seems that of all the sciences, the most fitting for this purpose would be first philosophy, or the science developed in the *Metaphysics*. Compare this with Aristotle’s argument at *Met.* Γ.2 1004b15-26 that first philosophy is superior to dialectics as the discipline that ‘properly’ studies the subjects common to all beings (i.e., being *qua* being and its *per se* attributes). Aristotle argues in this passage that although dialectics and sophistic assume the shape of (the first) philosophy, sophistic cares only to *appear* like (the first) philosophy. Dialectics studies the things that (the first) philosophy studies, but they differ in how they do what they are capable of doing (*ho tropos tēs dunameōs*): “dialectics is *peirastikē* about the things about which [the first] philosophy is *gnōristikē*.” In other words, by dialectics one tests (*peirazei*) the ignorance of another person about the

On the Aims, al-Fārābī claims that in metaphysics also “the principles of all [*jamī*] the particular sciences and the definitions of their subjects are made clear [*tatabayyanu*].” The definitions of the subjects of the particular sciences would be among the proper principles of the particular sciences. I pointed out above that “the principles of all [*jamī*] the particular sciences” could mean the sum total of the proper principles of the particular sciences, or it could mean the common principles of them. Although al-Fārābī does not settle this issue in the rest of *On the Aims* or in a related passage in the *Enumeration of the Sciences*, we get a more concrete picture of the subject-matter of the groundwork part of metaphysics in the *Enumeration of the Sciences*.

In the *Enumeration of the Sciences*,¹²⁶ al-Fārābī asserts that divine science (*al-‘ilm al-ilāhī*), i.e., metaphysics has three parts (75). These three parts match exactly the three parts of metaphysics distinguished so far: ontology, theology, and what I called the groundwork part. The subject-matter of ontology is much briefer in the *Enumeration*: he says that this part studies “the beings [*al-mawjūdāt*] and the things which are attributed [*ta‘rīḍu*] insofar as they are beings,” i.e., the *per se* attributes of beings, or the attributes of beings *qua* being (75). Observe that there is no mention of unity, no mention of the opposites of being and unity, and no mention of their kinds. That said, if one would want to express the subject-matter of ontology in a few words following Aristotle’s formulaic expressions of it, being and the attributes of being *qua* being would probably be the sought expression.¹²⁷

Next, al-Fārābī presents the subject-matter of the groundwork part of metaphysics in detail:

subjects studied both by dialectics and the first philosophy, but by the first philosophy one gains knowledge of (*gnōrizei*) those subjects (on the *peirastikoi logoi*, see *Index Aristotelicus* 575b8-12, in particular, *SE* 2 165a38-9, b4-6, 8 169b23-7, 11 171b3-6, 172a21-32). I should add that as I argued above, and as indicated at *APo* I.9 76a16-25 (cited in the previous footnote), Aristotle suggests that there is no ruling (*kuria*) science which *demonstrates* the proper principles of the other sciences, as Plato’s dialectics is apparently claimed to be capable of in *Republic* VI-VII; so metaphysics is not to overtake the throne of Plato’s dialectics if the latter is understood to be capable of *demonstrating* the principles of the other sciences; rather it seems that Aristotle’s metaphysics steps in to assume, among others, the function attributed to dialectics in Aristotle’s *Topics* of *giving an account of* the principles of the other sciences, and I called this a dialectical exposition and defense. I use “dialectical” in this phrase not in the sense of belonging to the discipline of dialectics according to a particular understanding of this discipline as in the *Met.* Γ.2 account mentioned above; all I mean is persuasive reasoning short of demonstration that derives its persuasiveness how well it performs compared to the views it targets. Such a reasoning can aim at outmaneuvering an ignorant person who pretends to be knowledgeable on a subject (*peirastic*), or it can aim at gaining better understanding by putting the targeted views into ‘rational’ tests (of their coherence, of their explanatory power etc.) (*gnoristic*).

¹²⁶ For my discussion of *Enumeration of the Sciences*, I occasionally consulted its Turkish translation: Al-Fārābī, *İlimlerin Sayımı: İhsâu’l-Ulûm*, trans. Ahmet Arslan (Ankara: Divan Kitap, 2014).

¹²⁷ See *Met.* Γ.1 1003a21-2, Γ.2 1005a13-4, E.1 1026a31-2.

والثاني – يفحص فيه عن مبادئ البراهين في العلوم النظرية الجزئية وهي التي ينفرد كل علم منها بالنظر في موجود خاص مثل المنطق والهندسة و<علم>¹²⁸ العدد وباقي العلوم الجزئية الأخر التي تشاكل هذه العلوم. ويفحص عن مبادئ علم المنطق ومبادئ علوم التعاليم، ومبادئ العلم الطبيعي ويلتمس تصحيحها وتعريف جواهرها. ويُحصي الظنون الفاسدة التي كانت وقعت للقدماء في مبادئ هذه العلوم مثل ظن من ظن في النقطة والوحدة والخطوط والسطوح أنها جواهر وأنها مفارقة، والظنون التي تشاكل هذه في مبادئ سائر العلوم فيُنقّحها ويبين أنها فاسدة.

[1] In the second [part of metaphysics, i.e., the groundwork], the principles of the demonstrations in the particular theoretical sciences are inquired into [*yufḥaṣu 'an*], and each of these sciences is distinguished by its investigation of a special being [*mawjūd khāṣṣ*], e.g., logic, geometry, arithmetic, and the other particular sciences which resemble these sciences. [2] [This part of metaphysics] inquires into the principles of the science of logic, the principles of the mathematical sciences [*ulūm al-ta'ālīm*], and the principles of natural science, and seeks their validation [*taṣḥīḥ*] and the explanation [*ta'rīf*] of their substance. [3] It enumerates the corrupt beliefs [*al-ḡunūn al-fāsida*] that occurred to the ancients about the principles of these sciences (e.g., the belief that the point, the unit, the lines and the surfaces are substances and that they are separate, and [other] beliefs like these about the principles of the remaining sciences) and it corrects [*yunqihū*] them and makes it clear that they are corrupt [beliefs].

We are told in (1) that the groundwork part of metaphysics studies “the principles of the demonstrations of the particular theoretical sciences.” Al-Fārābī does not explicitly mention that the object of inquiry is the *proper* principles of these sciences. So, we should not assume that he excludes the common principles. Of the particular theoretical sciences, he mentions logic, the mathematical sciences, and natural science. Following the view characterized as Aristotelian in the late antique Greek commentaries,¹²⁹ in some other works, al-Fārābī calls logic a *tool* for

¹²⁸ My addition.

¹²⁹ For example, Olympiodorus has a discussion of whether logic is a part (*meros*) or a tool (*organon*) of philosophy between the introduction to Aristotle's philosophy and the proper introduction to the *Categories* prefixed to his proper commentary on the *Categories* (14.13-18.12). (Of the extant Alexandrian Greek commentaries on the *Categories*, only Olympiodorus attaches this discussion to his *Categories* commentary; this account is usually presented in a general introduction to logic attached to the beginning of the commentaries on *APr*, as we see already in Alexander's commentary on *APr*. It is likely that the work called “Treatise on the preliminaries with which the book of the Analytics is prefaced [*maqāla fī muqaddimāt ṣuddira bihā kitāb anālūtīqā*]” attributed to Abū Bishr in the *Fihrist* draws on such accounts of a general introduction to logic attached to the beginning of the commentaries

philosophy and does not include logic in the division of philosophy, while if it is a theoretical science, as it is called in T8 (1), it should be included in the division of philosophy.¹³⁰ It is true

on *APr* by the late antique Greek commentators (Flügel 264 = Sayyid v.2 202). Al-Fārābī's general account of logic towards the end of his *Expressions Used in Logic* (p. 94-111) also draws on this Greek tradition, perhaps through this work by Abū Bishr). Olympiodorus says that the Stoics hold that logic is a part of philosophy, the Peripatetics hold that it is a tool of it, and Plato holds that it is both a part and a tool of philosophy. Olympiodorus presents arguments the Stoics supposedly provided to defend their position and Olympiodorus refutes them (14.28-15.30); then he presents arguments to support the Peripatetic position some of which he attributes to the Peripatetics (15.31-17.17) and then at 17.18-37 he presents the explanation he attributes to Plato that logic is a tool in a way, and a part in another way: "it is a tool when it investigates in terms of bare rules [*en psilois kanosi*], e.g., when I say 'from two universal affirmative [premises] a universal affirmative conclusion is inferred;' it is a part when they are used with the things themselves [*meta tōn pragmatōn autōn*], e.g., when I say 'the soul is self-moved, what is self-moved is immortal; therefore, the soul is immortal' [see Phaedrus 245c-6a]" (17.32-6). Olympiodorus agrees with the arguments he presents in support of the Peripatetic position, and he also agrees with the explanation that he attributes to Plato which he takes to be complementing the Peripatetic position.

As mentioned above, the other Greek commentators in this tradition do not present a detailed discussion of whether logic is a part or a tool of philosophy at the beginning of their *Categories* commentaries as Olympiodorus does, but they sometimes mention in passing that logic is a tool of philosophy. For example, Stephen Menn brought to my attention that in Simplicius' proper introduction to the *Categories*, responding to the question of under which part of philosophy should the *Categories* be placed, Simplicius says that it should be placed under the instrumental part because "logic as a whole is the instrumental part of philosophy, being like the measuring sticks, [i.e.], as the carpenter's rulers [are tools] for carpenters and house-builders [ἡ δὲ λογικὴ πᾶσα τὸ ὀργανικὸν ἐστὶ μέρος τῆς φιλοσοφίας, ὥσπερ οἱ κανόνες, ὥσπερ αἱ στάθμαι τῶν τεκτόνων τε καὶ οἰκοδόμων]" (20.8-12).

More generally, as I briefly touched upon above and will detail below in Section 4, the Alexandrian Greek commentators divide philosophy into theoretical and practical philosophy and logic is not presented as a part of philosophy but as its tool.

¹³⁰ In a short introduction to logic account called *Tawfi'a aw al-Risāla Allatī Šuddira bihā al-Manṭiq* (*Introduction or the Treatise with Which Logic is Prefaced*, henceforth *Introductory Treatise*) (v.1 55-62), al-Fārābī first divides arts (*šinā'i*) into the syllogistic (*qiyāsiyya*) arts and the non-syllogistic arts; he divides the syllogistic arts into five: dialectics (*al-jadal*), sophistics (*al-sūfistā'iyya*), rhetoric (*al-khiṭāba*), poetics (*al-shi'r*), and the demonstrative art (*burhāniyya*) which is also called the philosophical art (57-8). On the other hand, "the art of logic [*al-manṭiq*] provides, concerning each syllogistic art, the rules proper [to each] [*al-qawānīn al-khāṣṣa*] by which each [syllogistic art] is composed, and some rules by which one examines [*yumtaḥinu*] and evaluates in a discriminating manner [*yumayyizu*] what is assumed to be according to the method [*alā madhhab*] of each [syllogistic art] so as to know whether this is [indeed] according to its method or not" (58.3-5). Then al-Fārābī briefly reviews how the books in the extended Organon (i.e., including the *Rhetoric* and the *Poetics*) provide such rules for the five syllogistic arts or contribute to providing such rules. After this, he divides the philosophical art or simply philosophy into four: mathematics, natural science, divine science, and political science (*al-'ilm al-madanī*) (58-9). As I explain below in Section 4, this account follows the division of philosophy in the Greek introduction to philosophy literature. Since logic is not mentioned as a part of philosophy, al-Fārābī clearly does not consider logic a part of philosophy in this work. Logic is not part of one of the other four syllogistic arts either. Since logic serves them all, it seems reasonable to call logic a tool of all the syllogistic arts, including philosophy.

A similar reasoning is also presented in *Directing Attention* on p.226-7 (*Risālat al-Tanbīh 'alā Sabīl al-Sa'āda* (*Directing Attention to the Way to Happiness*), ed. Saḥbān Khalīfāt (Amman: Al-Jāmi'a al-Urduniyya, 1987)): logic is the art by which we get the power by which we grasp something as correct (*ṣawāb*) or incorrect (*bāṭil*) when it is in fact correct or incorrect and by which we avoid mixing them up; this power is needed for philosophy which is divided above in *Directing Attention* into theoretical and practical philosophy (224-5). So, it is implied that logic serves philosophy as a whole.

Al-Fārābī puts it more clearly in *Expressions Used in Logic*: "[the art of logic] is a tool [*āla*] for the knowledge of beings; for this reason, this art must not be believed to be a part of philosophy, but it is an art which stands by itself and is not a part of another art, nor is it the case that it is both a tool and a part [of another art] together [*wa-lā annahā āla wa-juz' ma'an*]" (107.16-108.3); it seems that in the last clause, al-Fārābī also denies the position attributed to Plato in Olympiodorus that logic is both a part and a tool of philosophy.

that in the *Enumeration*, al-Fārābī characterizes the aim of logic similar to the way he characterizes it in these other works, and he even calls logic a tool (*āla*) in the *Enumeration*, likening it to scales.¹³¹ So the account of logic in the *Enumeration* is by no means an outlier. However, he uses the term “science [‘ilm]” somewhat loosely in the *Enumeration* to include rational disciplines like grammar that are not included in the division of philosophy literature in the late antique Greek commentaries.

In *Directing Attention*, on p.233-7, al-Fārābī describes the principles (*awā’il*) of arts and sciences, including the art of logic. In this *Directing Attention* account, we find a simplified picture of the principles of the arts and sciences compared to the more elaborate picture in the *Book of Demonstration* I started to discuss above and will continue to do so in the following sections. However, the account in *Directing Attention* has some details that we do not find in the more elaborate account in the *Book of Demonstration*. In the *Directing Attention* account, al-Fārābī asserts that we have knowledge (*ma’rifā*) of two kinds of things. On the one hand, no one of the sound mind (*salīm al-dhihn*) lacks (*ya’rā min*) the knowledge of the first kind of things: “e.g., that the whole of something is more than and is greater than [*akthar wa-a’zam*] a part of it, and that human is different from horse.” Such claims are called “popular knowledge [*al-‘ulūm al-mashhūra*]” and “generally accepted principles [*al-awā’il al-muta’arafa*].” No one can deny these claims in their mind even if they deny them in their words. On the other hand, not everyone has the knowledge of the second kind of things. The knowledge of this second kind of things is gained sometimes easily and sometimes with much effort but always from the knowledge of the first kind of things. Al-Fārābī further asserts that all the sciences have their principles among the first kind of things but different sciences have different ones as their principles; among the first kind of things, the principles of logic are those which are appropriate (*yaṣluḥu*) for logic. Al-Fārābī then goes on to suggest that we have innate (*gharīzī*) knowledge of the things of the first

¹³¹ In his explanation of the aim (*gharaḍ*) of logic in the *Enumeration* (27-29; observe “so these are the whole aim of logic” on p.29 line 8 at the end of this account), al-Fārābī says that “the art of logic provides as a whole the rules [*al-qawānīn*] which are of the nature to set the intellect straight [*tuqawwima*] and guide the person towards the way of correctness [*al-ṣawāb*] and towards truth [*al-ḥaqq*] in each thought [*ma’qūl*] in which one can err, and the rules which guard him against and protect him from incorrectness [*khaṭā’*], mistake [*zalaḥ*], and error [*ghalaṭ*], and the rules by which one examines, among the thoughts, that about which one is not sure that he made a mistake... the logical rules which are the tools [*ālāt*] by which one examines, among the thoughts, that about which one is not sure that the intellect erred or fell short in grasping its truth [*ḥaqīqatihi*] are like the scales and measures [*al-mawāzīn wa-l-makāyīl*] by which one examines, among most bodies [*fī kathīr min al-ajsām*], that about which one is not sure that the sense erred or fell short in grasping its measure [*taqdīrihi*]...”

kind, but sometimes we are not aware (*yash 'uru bi*) of their thoughts (*al-ma 'ānī al-ma 'qūla*) which already came about (*ḥāṣil*) in our mind but hearing the expressions (*alfāẓ*) that denote them help us recognize that they already came about in minds. Also, sometimes the thoughts of the first kind of things that already came about in our minds are in a jumbled-up state and they need to be separated (*tanfaṣilu*) in order to be grasped distinctly (i.e., on their own, *'alā ḥiyālihi*), and hearing the distinct (*mutabāyina*) expressions denoting them help us grasp them distinctly. For both of these purposes, it is useful to know more generally which sort of expressions denote which sort of things. Al-Fārābī concludes his account by observing that most of the principles of logic are in this state (i.e. either that we are not aware that their thoughts already came about in our minds, or that their thoughts are in a jumbled up state in our minds); so, to the extent that grammar provides knowledge of which sort of expressions are used by the ordinary speakers of a language to denote which sort of things, the study of grammar is useful for logic. Al-Fārābī does not specify how grammar in particular will help us bring to our awareness the thoughts of the first kind of things which were already in our mind without our awareness of them or to grasp them distinctly while they were previously in a confused state in our mind; nonetheless, it seems that knowing the kind and form of the words that generally refer to substances (nouns from which other words are not normally derived,¹³² e.g., “*insān*”) and those which refer to accidents in substances (finite verbs: e.g., “*yamshī*,” or the adjectives: e.g., “*al-abyaḍ*”), and those which refer to accidents themselves (the *maṣḍar* of the verb: e.g., “*mashy*” or the *maṣḍar* of the adjective: e.g., “*bayāḍ*”) and all the exceptions to these general rules would help us avoid making category mistakes and to that extent it would contribute to our clear and distinct understanding of the things denoted by such words.

I will come back to some interesting details in this passage below and it is also worth observing in passing that this passage seems to express part of the reason behind al-Fārābī’s interest in the ordinary language analysis of the meanings of philosophical terms and his interest in explaining category mistakes turning on the form of the words that we see in his *KH*.¹³³ For our current purpose of getting clearer on what are the principles of logic that al-Fārābī talks about in T8, though, this passage does not offer much help. We are told in the *Directing Attention* account that

¹³² Except for by the suffix by which an adjective is derived from a noun, *-ī*, and in particular, the use of the feminine form of an adjective derived from a noun in this way as an abstract noun, e.g., “*insāniyya*.”

¹³³ For a clear and insightful discussion of these concerns in *KH* especially in connection with the discussion of being (*mawjūd*) and the related terms, see Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*.

the principles of logic are among the self-evident truths or things whose knowledge anyone with the sound mind has like the principle that the whole is greater than the part or that human is different from horse. These examples are clearly not examples of the logical principles we are seeking. But perhaps we can extrapolate from these two examples: the first example is a common mathematical principle; so perhaps the logical principles that the *Directing Attention* passage describes are meant to include the common principles like the principle of non-contradiction. The second example seems to turn on simply knowing the meanings of the words “human” and “horse.” So perhaps the logical principles at issue will also include definitions of the properly logical terms (e.g., the names of the categories) that are easily grasped by anyone with linguistic competence (even though there would probably be controversies about such principles that would need to be addressed in the groundwork part). We are also told in the *Directing Attention* passage that each science has some of these self-evident truths which are appropriate for it (*yaşluhu*) as its principles, and the logical principles then are those self-evident truths which are appropriate for logic. So, in contrast with my suggestion above that the common principles like the principle of non-contradiction might be considered among the principles of logic, this might perhaps be taken as an indication that the *Directing Attention* passage restricts its description of the principles of a science to the *proper* principles of a science, and according to this interpretation of the *Directing Attention* passage with a restricted description of the principles of a science, the principles of non-contradiction and of excluded middle which are principles of all the sciences would not be classified as principles of any particular science, and hence also not of logic. Finally, we saw in the *Directing Attention* account that for most of the logical principles, we are not aware of the fact that we already grasped them or we grasped them in a confused way, and we need to be linguistically prompted to realize that we already grasped them or to grasp them distinctly. The linguistic prompting described in the *Directing Attention* passage seems rather simple, but perhaps the state of most of the logical principles in our mind described in this passage can be taken as an indication that most of such logical principles lend themselves to be spun wrong views around by philosophers who are prone to or vulnerable to sophisms, and as indicated in T8 from the *Enumeration* above, such false views would be demolished or explained away in the groundwork part of metaphysics.

Whether the common principles like the principle of non-contradiction are to be considered principles of the science of logic, or the common principles of all the sciences, or both is not very

important for my current purpose. That said, since logic is counted among the particular theoretical sciences in T8 (1), the principles of logic considered in this passage might rather be the principles of the views specifically discussed in the *Organon*.¹³⁴ Yet, if we assume that the common principles of non-contradiction and excluded middle are not covered in T8, we need to be prepared to answer the following two questions. First, these principles are clearly discussed in *Met.* Γ.4-8; in which of the three parts of metaphysics distinguished in T8 and the surrounding passage in the *Enumeration* would this discussion fall (sc. the ontology, the theology, and the groundwork parts)? Second, what would be an example of a false view about the principles of logic as a particular science as indicated in T8 if the obvious candidates, the principles of non-contradiction and of the excluded-middle, are not among such logical principles? I do not think that there are straightforward answers to these questions, but this does not mean that they cannot be answered.¹³⁵

In T8 (2), al-Fārābī says that this part of metaphysics studies the principles of logic, of natural science and of the mathematical sciences by seeking to validate (*taṣḥīḥ*) their principles and explain (*taʿrīf*) their substances. Al-Fārābī does not state explicitly what he means by this, but the following sentence (i.e. (3)) appears to illustrate it. Accordingly, the groundwork part of metaphysics identifies the “corrupt beliefs” about the principles of these sciences that earlier philosophers held and it “corrects them and makes it clear that they are corrupt.” As we see below in my presentation of the account of the theology part of metaphysics in the *Enumeration*,

¹³⁴ I was invited initially to consider this point about the proper principles of logic by Stephen Menn.

¹³⁵ Averroes’ *Epitome* and *Long Commentary on the Metaphysics* provide some clues for answering these two questions. First, starting from Averroes’ point at *Long Commentary* 337.18-8.6, it might be argued that Γ.3-8 discusses the false views about the principles that are common to all the sciences and that concern being *qua* being, and hence should be considered in the ontology part as dialectical arguments justifying some principles of the ontology part. According to this understanding, not only the groundwork part but also the ontology part (and maybe also the theology part) would contain dialectical exposition and defense of some of its principles. Also, starting from Averroes’ claim about the content of the groundwork part in his *Epitome*, 59, it might be argued that a principle of logic as a particular science is the principle stated in *APo* that there is demonstrative knowledge only of universals (*Kitāb ‘Ilm Mā Ba‘da al-Ṭabī‘a wa-Huwa min al-Jawāmi‘ Allatī Allafahā al-Faqīh al-Qādī Abū al-Walīd bin Rushd* (*The Book of the Science of Metaphysics Which is from the Epitome Composed by the Jurisprudent and the Judge Abū al-Walīd bin Rushd*), ed. Carlos Quirós (Madrid: Al-Maṭba‘a al-Abīrqa [?], 1918); I also consulted the English translation by Arnzen: Averroes, *Averroes on Aristotle’s “Metaphysics”: An Annotated Translation of the So-Called “Epitome,”* trans. Rüdiger Arnzen (Berlin: De Gruyter, 2010)). A false view about this principle would be the view Aristotle attributes to Plato that the possibility of scientific knowledge requires proper objects of scientific knowledge, and these are the Platonic Forms, i.e., universals separate from perceptible particulars (as discussed in, e.g., *Met.* M.9 1086a21-M.10). Both of these points are inspired by Arnzen’s relevant observations in his article “On the Nature and Fate of Chapter V of Ibn Rushd’s *Epitome* of Aristotle’s *Metaphysics*,” in *Islamic Thought in the Middle Ages: Studies in Text, Transmission and Translation, in Honour of Hans Daiber* (Leiden: Brill, 2008), 43–58.

when al-Fārābī wants to say that metaphysics demonstrates something, he uses the technical word for demonstration (*burhān*). That he talks about the “validation” of their principles, the “explanation” of their substances, “correcting” the corrupt beliefs about them, “making clear” that they are corrupt beliefs suggests that this process falls short of demonstration in T8 (2), (3). For what it is worth, in the passage from *On the Aims* that appears to talk about the groundwork part or the groundwork function of metaphysics, i.e., T6 (2), al-Fārābī says that in metaphysics the principles of all the sciences and the definitions of their subjects are “made clear.”¹³⁶ So, it seems reasonable to assume that al-Fārābī has in mind a dialectical expounding and defense of the principles of logic, mathematics, and natural science by somehow exposing the faults in the incorrect beliefs held by earlier philosophers about these principles.

Al-Fārābī’s example of such an incorrect belief in (3) is helpful: some people think that the mathematical objects are substances, and that they are separate. Such views are presented or discussed in various places in the *Metaphysics* (e.g., the 12th aporia in B.5, Z.2 1028b13-27; also compare Δ.8 1017b17-21) but these and related views about whether the mathematical objects are the ultimate principles are most extensively discussed in *Met. M* and *N*. Al-Fārābī did not have access to *Met. N*.¹³⁷ He could extract this problem from the earlier books of the *Metaphysics* but given that he likely had access to *M*, we would expect him to locate such an inquiry into the corrupt beliefs about the principles of mathematics in *Met. M*. Al-Fārābī does not give any example of the “corrupt beliefs” about the principles of logic and of natural science, but he says in T8 (3) that there are such beliefs about the principles of logic and of natural science

¹³⁶ By contrast, Asclepius (*apo phōnēs Ammoniou*) explicitly states that first philosophy *demonstrates* (*apodeiknusi*) the principles of all the sciences (2.17-20). Also, as reported by Simplicius, Porphyry seems to argue in his *Physics* commentary that the principles of natural science are *demonstrated* by first philosophy (9.10-22). These passages were brought to my attention by Menn, *Al-Farabi’s Metaphysics*, n.8.

¹³⁷ In al-Fārābī’s description of the aims of the individual books of the *Metaphysics* towards the end of *On the Aims*, he describes the aims of twelve books; apparently discarding *Met. A* and starting from *Met. α*, he describes the aims of all the books down to *Met. M*; some of these descriptions do not seem to fit the contents of those books as we find them in Aristotle’s *Metaphysics* but others fit better. As quoted above as T3, the description of the eleventh book fits the contents of *Met. Λ* well and it is reasonable to expect that the next and the final book al-Fārābī describes is *Met. M*. He describes the aim of the twelfth book of the *Metaphysics* (according to his counting), which is the last book of the *Metaphysics* whose aim he describes in *On the Aims* as follows: “the twelfth book is on the principles of natural things and mathematical things [*al-ṭabī’iyyāt wa-l-ta’līmīyyāt*]” (38.5). It is not obvious how this is a description of the contents of *Met. M*, but I try to explain in the surrounding discussion how al-Fārābī might have understood what Aristotle tries to achieve in *Met. M*. In any case, as Bertolacci points out in *On the Arabic Translations*, no medieval Arabic translation of *Met. N* is extant, and a medieval Arabic translation of *Met. N* by Naẓīf is attested (whose translation of parts of *Met. A* is preserved in Averroes’ *Long Commentary*), but Naẓīf was active in the second half of the tenth century and even if he translated *Met. N* into Arabic, it is unlikely on chronological grounds that al-Fārābī could have access to his translation.

too. As discussed already, *Met.* Γ.4-8 would be the natural place to locate such an inquiry into the corrupt beliefs about the principles of logic.¹³⁸ It is hard to figure out what sort of principles of natural science al-Fārābī has in mind in this passage, but perhaps one such “corrupt belief” about the principles of natural science would be that we need to posit separate Platonic forms as the causes of the perceptible particulars; in particular, Aristotle argues in more than one place in the *Metaphysics* that the separate Platonic forms do not have any value when it comes to explaining the generation of a natural particular substance, and if the separate Platonic forms are said to be the causes of the perceptible particulars, we would expect them to play some explanatory role in the generation of natural particular substances.¹³⁹

¹³⁸ On the assumption that the principle of non-contradiction and the principle of excluded middle are among the logical principles al-Fārābī talks about in T8. If he means rather some proper principles of logic, see Footnote n.135 above for a suggestion for what might be considered a discussion of such a proper principle of logic in the *Metaphysics*.

¹³⁹ He argues for this view, perhaps most clearly, at *Met.* Z.8 1033b19-4a8 with the conclusion, “so it is clear that we need to furnish no form as a paradigm (for it would be sought after most of all in these cases [e.g., to explain the generation of a human being] for these are substances to the greatest degree) but it is sufficient that something which begets [*to gennōn*] produces [the offspring] and that it is the cause of the form[’s being] in the matter. And the whole, [i.e.,] this sort of form in these flesh and bones, is already Callias and Socrates.” More generally, Aristotle also spells out and shoots down the ways the separate Platonic forms could be taken to causally contribute to the perceptible particulars in *Met.* M.5.

In *Phys.* I.4-9, Aristotle argues that there are three principles of change: the form, the privation, and the subject which persists through change; the privation and the subject which persists through change concur in the same thing, i.e., in the underlying subject (*hupokeimenon*) which is called matter (*hylē*) prominently in the last chapter, i.e., I.9. He also argues in *Phys.* II.1 that both matter and form can be called natures, but form deserves to be called so more than matter. So, both matter and form are principles of natural science or they are elements of some principles of natural science (if it is so that the principles of natural science include change and nature, but not matter and form themselves). Aristotle discusses matter and the underlying subject in the *Metaphysics* too and when al-Fārābī talks about the “corrupt beliefs” about the principles of natural science being discussed in the *Metaphysics*, he might mean the discussions of the views on matter or the underlying subject that Aristotle argues against in the *Metaphysics* too. However, it seems that in some sense the discussion of form belongs more firmly to metaphysics or first philosophy than the discussion of matter. Aristotle briefly discusses what matter or the underlying subject is in *Phys.* I. In particular, in I.8 he identifies the flaw in the monist arguments against change and plurality as lying in their failure to recognize the dual character of the underlying subject: privation which is no more when the change is complete, and the underlying thing which persists throughout the change and comes to assume the form when the change is complete; likewise, in I.9 he criticizes, apparently, the Platonists for failing to recognize the dual character of matter. “But,” he says, “about the principle as form [*tēs kata to eidos archēs*], [that is, about] whether it is one or many and what it is or what they are, making determinations with precision [*di’ akribeias*] is the job [*ergon*] of first philosophy; so let [such a discussion] be reserved for that occasion; but about the natural and corruptible forms we will talk in [the accounts] presented later” (192a34-b2). This passage seems to address the unmoved movers of the heavens discussed in *Met.* Λ., but it might also be referring to the general discussion of the ontological character of the form and its causal role in reality (so including the relevant discussions in *Met.* Z and H; on this point, also see *Phys.* II.7 198a35-b3). In any case, the “corrupt beliefs” from an Aristotelian standpoint that there are separate Platonic forms and that they are the causes of the perceptible particulars would not be discussed in works in natural science because natural science studies material things, but such claims would be about the purported immaterial principles of natural science or such elements of the principles of natural science. I developed my thoughts on this possibility about what sort of “corrupt beliefs” about the principles of natural science that al-Fārābī talks about in T8 starting from a conversation with Stephen Menn.

So, it would not be surprising if al-Fārābī thought that the groundwork part of metaphysics is developed in *Met.* Γ.4-8 (about the logical principles) and in *Met.* M (about the mathematical principles). If I am right about what sort of “corrupt beliefs” about the principles of natural science he has in mind, it would not be surprising if he thought that the groundwork part of metaphysics regarding the principles of natural sciences are developed in places like *Met.* Z.8 and M.5.

However, this expectation is only partially fulfilled in al-Fārābī’s discussion of the aims of the individual books of the *Metaphysics* at the end of *On the Aims*. First of all, al-Fārābī does not mention explicitly in his account of the aim of Γ that in this book Aristotle also investigates the logical principles. Instead, all al-Fārābī says is that Book Γ “comprehends the counting of the subjects of this science, which are the entities [*ma ‘ānī*] that it investigates, and [this Book] is on the accidents which are proper to them¹⁴⁰ [sc. proper to the subjects of this science], which we have already counted” (37.4-5). This description would cover Γ.1-2, and perhaps Γ.3 can also be forced under it, assuming that Γ.3 further counts the subjects of this science (i.e., in some sense the common mathematical and the logical principles are also subjects of this science),¹⁴¹ but I do not see any natural reading of the account of the aim of *Met.* Γ in *On the Aims* which takes this account to describe also the dialectical discussion of the common logical principles in Γ.4-8.¹⁴²

We are somewhat luckier when it comes to the principles of mathematics and of natural science. Al-Fārābī explicitly says about the aim of *Met.* M that this book is about “the principles of natural things [*al-ṭabī‘iyyāt*] and mathematical things [*al-ta‘līmīyyāt*]” (38.5). It is easier to see why al-Fārābī perceived *Met.* M as an investigation into the principles of mathematical things but he seems to be viewing the discussion of the forms, or maybe in particular about whether the separate Platonic forms could be causes of the perceptible particulars in M.5 as an investigation into the principles of natural things. Moreover, al-Fārābī concludes in his account of the aim of *Met.* Z that in this book Aristotle verifies (*taḥqīq*) “which forms are separate and which forms are not separate and that the paradigms [*al-muthul*, i.e., Platonic forms] do not exist.” In his account

¹⁴⁰ I read *biḥā* with Kiankhah. She notes that all the mss. and the Hyderabad edition have *biḥā*.

¹⁴¹ Or perhaps only the common logical principles. See Footnote n.118 above about the apparent reference to the common mathematical principles at the beginning of Γ.3.

¹⁴² Even if we assume that for al-Fārābī the principles of non-contradiction and excluded middle are not among the principles of logic, properly speaking, it is still puzzling that al-Fārābī does not say anything in his description of the aim of *Met.* Γ which points to the discussion of these two principles in Γ.4-8.

of the aim of *Met. H*, he says that this book contains “[1] a summary of [*Met. Z*], [2] the completion of the account on the Platonic forms [*al-ṣuwar al-aflāṭūniyya*] and the fact that things subject to generation [*al-mutakawwināt*] do not need them for their generation, and [3] the verification of the account about the definitions of the separate things, in case they exist, and that their definitions are their essences [*dhawātuhā*]” (37.17-21). Al-Fārābī mentions precisely the issue I flagged above, namely that separate Platonic forms are not needed to explain the generation of natural things, but it is odd that he locates it in *Met. H*. *Met. H* starts with a summary of *Met. Z*, corresponding to (1) in al-Fārābī’s account of the aim of *Met. H*. However, it is not clear what (2) and (3) correspond to in *Met. H*. Perhaps al-Fārābī thought that H.6 1045a36-b7 can be understood as corresponding to (3) as Aristotle starts this passage talking about things without matter, and he goes on to argue that each of such things is right away one (*hen*) and is a being (*on*) in the sense that it does not have a separate cause of the fact that it is one or that it is, and that one and being are not in their definition as their genus. However, Aristotle does not seem to be talking about separate Platonic forms in this passage, but rather the substantial and the accidental forms in the composite substances.¹⁴³ It is also not easy to find what (2) corresponds to in *Met. H*. Aristotle discusses forms in *Met. H*, but it is hard to see why al-Fārābī thinks that *Met. H* wraps up the discussion of the Platonic forms and that we do not need them to explain the generation of natural things. Perhaps al-Fārābī’s thinking is that in *Met.*

¹⁴³ For my claim that in this passage Aristotle seems to be talking about the accidental and substantial forms in the composite substances and not separate Platonic forms (or the immaterial substances of *Met. Λ* as one might think), see in particular 1045a36-b2 and b7. At 1045b7, Aristotle asserts that the things under consideration (i.e., the essences (1045b3) and presumably also “the things which do not have matter” mentioned above (1045a36)) are not separate things beyond the particulars. At 1045a36-b2, he asserts that “each of the things which do not have matter... is right away some one thing, just as it is also some being, i.e., a substance, a quality, or a quantity [ὅσα δὲ μὴ ἔχει ὕλην... εὐθὺς ὅπερ ἓν τί ἐστὶν ἕκαστον, ὥσπερ καὶ ὅπερ ὄν τι, τὸ τόδε, τὸ ποῖόν, τὸ ποσόν].” This suggests that the things which do not have matter under consideration are under the category of substance, or quality, or quantity (and presumably also others). (*Met. Z*.9 1034b7-19 has a similar language specifying that the claim in that passage that the forms are not generated holds not only in the category of substance but also in the other categories). The following is the outline of the arguments in *Met. H*.6 as I understand this chapter: Aristotle argues first that the cause of the unity of the definition, and the form-matter composite, is the form because the form is the actuality of which the matter is the potentiality. Then at 1045a36-b7, as a parenthetical remark, Aristotle responds to an imaginary interlocutor pushing the question one step further and asking what is the cause of unity for the form itself; Aristotle’s answer is that the form is and it is one as a brute fact (whether it is a substantial form or an accidental form). Then at 1045b7-17, Aristotle returns to the main issue of what explains the unity of the form-matter composite and he identifies that the earlier philosophers posited participation (*methexis*) and communion (*sunousia*) and other similar relations to explain the unity of the form and the subject which Aristotle explains by asserting that the form is the actuality of which the matter is the potentiality (see especially 1045b16-7). Finally, at 1045b17-23, Aristotle closes the chapter and the book by summarizing his solution to the problem of explaining the unity of the definition, and the form-matter composite, in terms of actuality and potentiality.

H, Aristotle presents his positive account of the forms and the role they play in the generation of natural things, and this, by negative implication, completes the argument that the Platonic forms are not needed. Or perhaps al-Fārābī has in mind more particularly what Aristotle says at 1045b7-17. Earlier in H.6, Aristotle solves the aporia about the cause of the unity of the definition, and the form-matter composite, by asserting that the form is the actuality of which the matter is the potentiality. At 1045b7-17, he suggests that some unnamed earlier philosophers posited participation (*methexis*), while Lycophron posited communion (*sunousia*) and yet others talked about bond (*sundesmos*) or combination (*sunthesis*) in order to account for the unity of the form and the subject but Aristotle’s solution is supposed to explain what they are trying to explain without all the problems that attach to their positing of these relations.¹⁴⁴ As Aristotle puts it, they posit these relations because in effect “they seek an account of potentiality [*dunameōs*] and actuality [*entelecheias*] which makes them one [*henopoion*] and [they seek] the difference [between them]” (1045b16-7). It is worth adding that there are some other misfits with varying degrees of oddity in the descriptions of the aims of the other individual books of the

¹⁴⁴ For example, one problem is that they need a further cause to explain why what participates (or what is in communion etc.) participates in that in which it participates (*Met.* Λ.10 1075b17-20). There are also a host of problems that attach to the separate Platonic forms.

Metaphysics;¹⁴⁵ this fact prompts us to ask how carefully al-Fārābī could study all parts of the *Metaphysics* that was likely available to him.¹⁴⁶

We saw so far that according to the *Enumeration* account of the subject-matter of metaphysics, there is a third part of metaphysics which is clearly distinct from its ontology and theology parts. This groundwork part, as I called it, might be what al-Fārābī talks about in T6 (2) of *On the Aims*. Moreover, the descriptions of the aims of the individual books of the *Metaphysics* towards end of *On the Aims* might be taken to agree in part with this understanding that metaphysics has a third part distinct from its ontology and theology parts: at the very least, the *On the Aims* description of the aim of *Metaphysics* M lends itself to the interpretation that this book deals with the dialectical exposition and defense of the principles of the mathematical and the natural sciences as explicitly described in the *Enumeration* passage (T8) discussed above.

¹⁴⁵ First of all, several of al-Fārābī's accounts of the aims of the individual books of the *Metaphysics* fail to mention the topics discussed in the last parts of these books. I mentioned above that Γ.4-8 (probably also Γ.3) are missing from al-Fārābī's account of the aim of this book but as we can see from my quote of al-Fārābī's account of the aim of *Met. Z*, he seems to end his account with Z.16, leaving Z.17 out. Moreover, his account of *Met. α* leaves α.3 out; his account of *Met. E* leaves out the discussion of being *qua* true (i.e., E.4); similarly, his account of *Met. Θ* leaves out the discussion of truth in the last chapter of this book (i.e., Θ.10). Besides this common pattern of leaving out the last parts of some books, there are other kinds of oddities in al-Fārābī's accounts. His account of the aim of *Met. K* states that this book is about "distinguishing the principles and the attributes [*'awāriḍ*] of this science" (Kiankhah has *tamayyuz* instead of Dieterici's *tamyīz* but there is no important difference in meaning). This statement is vague and is rather an odd description of the subject of the whole book. We have another, and this time smaller oddity in his account of E: after saying that this book points out that Aristotle investigates being *per se* but not being *per accidens*, al-Fārābī adds that this book also points out "how it [being *per accidens* = *huwiyya allatī tuqālu bi-l-'araḍ?*] has something in common with dialectics and sophistics [*tushāriku al-jadal wa-ṣinā'at al-mughālīṭīn*]." In his translation of this clause, Bertolacci refers to E.2 1026b14-6 (*The Reception of Aristotle's Metaphysics*, 70); Aristotle does say in this passage that the sophists are concerned with being *per accidens* but there is no mention of dialectics in this passage. Nonetheless, it is possible that al-Fārābī himself added "dialectics" thinking that whatever is said to apply to sophistics in the surrounding passage also applies to dialectics even though it is not explicitly mentioned by Aristotle. That said, even if al-Fārābī has in mind this passage from Aristotle, it is strange that he finds this detail important enough to mention in his account of the aim of the whole book of *Met. E*, but not Aristotle's discussion of being *qua* true in E.4. I quoted al-Fārābī's account of the aim of *Met. Λ* above (T3) and see below for some of the misfits between the actual Λ and al-Fārābī's account of its aim. I would not call al-Fārābī's account of *Met. Δ* odd but it clearly betrays the particular way he reads this book of the *Metaphysics* that may not be obvious to every reader of this book. More on how al-Fārābī understands *Met. Δ*, see Appendix: Ontology in *Met. Γ.1-2* and *Met. Δ*.

¹⁴⁶ As I pointed out in Footnotes n.54 and n.137 above, it seems unlikely that al-Fārābī had access to Arabic translations of *Met. A* and *Met. N*; *Met. A* was translated into Arabic by Naṣīf and an Arabic translation of *Met. N* by Naṣīf is also attested but Naṣīf was active in the second half of the tenth century, i.e., after al-Fārābī's death. Apart from these two books, it seems that al-Fārābī could have access to all the other books of the *Metaphysics*. See in particular the table "Overall survey of the Arabic translations of the *Metaphysics*" on p.270 of Bertolacci, *On the Arabic Translations* for an overview of Bertolacci's discussion of which translators produced translations of which books of the *Metaphysics*; of the translators mentioned in this table, Mattā and the ones before him died before al-Fārābī (i.e., before 950/1) and it is also chronologically possible for al-Fārābī to have access to the translations by his younger peer in Baghdad, Yahyā b. 'Adī who died a few decades after al-Fārābī (namely in 974).

The groundwork part of metaphysics seems to be auxiliary compared to its core parts, i.e., ontology and theology. First, the discussions in the *Metaphysics* that can be taken to fall under the groundwork part as presenting dialectical exposition and defense of the principles of the particular sciences are somewhat marginal to the main argumentative arc in the *Metaphysics* culminating in *Met. Λ*. So even if someone wants to find a groundwork part in Aristotle's *Metaphysics*, one can find it only as sidelined by the ontological and the theological discussions. Also, as I briefly touched upon above, since the core function of an Aristotelian science is to provide causal accounts, ontology by itself would be lacking as a science without theology providing the ultimate causal accounts of all beings whose general attributes are studied in ontology. Likewise, it seems that we need the study of the general attributes of all beings in order to understand fully the ultimate causes of all beings not insofar as they have particular natures but insofar as they exist (and have other general attributes shared by every being, e.g., unity). So, theology and ontology need each other to have a complete science which studies the ultimate principles of all beings insofar as they exist (and have other general attributes). That said, it seems that we would be losing nothing essential in theology and ontology if the groundwork part is left out. The view that the groundwork part is auxiliary and can be left out without much harm to the integrity of metaphysics as a science is confirmed by al-Fārābī's neglect of the groundwork part as a distinct part of metaphysics in his accounts of the subject-matter of metaphysics in his other works as discussed in detail below.

Before I move on to the discussions of the subject-matter of metaphysics and how metaphysics relates to the principles of the other sciences in other works by al-Fārābī, let me summarize his account of the theology part in the *Enumeration*, because I will come back to this point below. Of the three parts of metaphysics, the longest account in the *Enumeration* is on the subject-matter of the theology part (76-7). Here al-Fārābī adds much to his pithy discussion of the subject-matter of the theology part in *On the Aims*. According to the account in the *Enumeration*, the theology part of metaphysics studies “the beings which are neither bodies nor in bodies.” In this part we inquire into whether such beings exist. Demonstrating (*yubarhinu*) that they do,¹⁴⁷ we ask how many they are. When this question is answered, we inquire into their order in

¹⁴⁷ Al-Fārābī asserts here that theology demonstrates the existence of these beings separated from matter or bodies in reality, but as will be detailed below in Section 5, the demonstration of the existence of such beings is, in a way, on the border between natural science and metaphysics.

perfection (*martaba fī kamāl*). Demonstrating that they come in a certain order of perfection, following this order from the least perfect, we arrive at the most perfect one. Showing that the most perfect first cause exists, we finish the ‘way-up’, so to speak; then we pursue the ‘way-down’, first with a plateau spelling out the attributes of the first. We show that there is nothing that shares the rank of this being; it does not have a partner (*naẓīr*)¹⁴⁸ or a contrary (*ḍidd*); it is the first and there is nothing prior to it but everything else is posterior to it. We show that this being does not acquire (*istafāda*) its being, its unity, or its reality (*ḥaqīqa*) from anything else, but it gives (*afāda*) being, unity, and reality to everything else; also, there is no multiplicity in this being. So, this being deserves to be called being, one, and real more than anything else. In the end, theology makes us see that what has all these attributes (*ṣifāt*) is God, and it also spells out the other attributes of God. Next, theology traces how other beings acquire their being from God and in what order they are arranged. We go through all of God’s activities (*af‘āl*) on the other beings and show that there is no lack (*naqṣ*) in God, in his activities, or in his creatures. Finally, theology refutes the corrupt beliefs (*al-ẓunūn al-fāsida*) that attribute a lack to God, or his activities, or his creatures with “demonstrations that yield certain knowledge [*al-‘ilm al-yaqīn*].”

In the *Enumeration*, al-Fārābī provides a richer account of the groundwork and the theology parts of metaphysics compared to the corresponding accounts in *On the Aims*. Although the description of the subject-matter of the theology part has a core that it shares with what Aristotle does in *Met. Λ*, it also differs from *Met. Λ* in many significant ways. I am not going to report all the differences since this is not my main purpose here, but it is worth noting in particular that the ‘way-down’ is absent in the *Metaphysics*.¹⁴⁹ Nonetheless, as we saw in T3 from *On the Aims* where al-Fārābī states the aim of *Met. Λ*, he states that *Met. Λ* is on (1) God, (2) the immaterial beings that are posterior to God, and (3) “the order of being that the beings [coming] out of [God] have.” How the beings are ordered in their procession from God seems to hint at the ‘way-

¹⁴⁸ I translate *naẓīr* as “partner” following Menn, *Al-Farabi’s Metaphysics*. As Menn points out in *Al-Farabi’s Metaphysics* Sections 2 and 4, the claim that theology shows that God does not have a contrary or a partner anticipates al-Fārābī’s argument in *MF* Ch.1 that the first (i.e. God) does not have a contrary and there is nothing that has the existence of the first. More on how *MF* implements the program for the theology part as described in the *Enumeration* (and much more briefly in *On the Aims*), see Sections 5 and 6 below.

¹⁴⁹ For a useful overview of how this *Enumeration* account compares with Aristotle’s account in *Met. Λ*, see Menn, *Al-Farabi’s Metaphysics* Section 2, and in Section 4 the paragraph containing n.41 and this note itself on the non-Aristotelian sources of the ‘way-down’.

down' detailed in the *Enumeration* account. In any case, I summarized the account of the subject-matter of theology in the *Enumeration* because although I will not discuss *MF* and *SM* extensively, I will outline in Section 5 how al-Fārābī presents or could present the 'way-up' and the 'way-down' of the theology part.

Section 3: The subject-matter of metaphysics in the *Book of Demonstration* and the relations between metaphysics and the particular sciences in terms of their principles

Al-Fārābī has a shorter but informative characterization of metaphysics in the *Book of Demonstration* too. After explaining that a science or art is composed of subjects, problems, and principles, as I summarized above, al-Fārābī presents a division of sciences or arts: similar to the account in *On the Aims*, he first divides the sciences and the arts into the universal ones whose subjects (*mawḍūʿ*) are “universal entities [*umūr kulliyya*] like being simpliciter [*al-mawjūd ʿalā al-iṭlaq*], the one and the many” and the particular ones whose subjects are particular kinds of beings “like number and magnitude [*iḍām*]” (62). Differently from the account in *On the Aims*, al-Fārābī asserts here that there are three “arts whose subjects are common entities [*al-umūr al-ʿamma*]”: wisdom (*ḥikma*) or first philosophy,¹⁵⁰ dialectic, and sophistic. These three arts differ from each other in respect of their principles, their way of investigation (*naḥw al-naẓar*), the extent of their knowledge (*miqdār al-maʿrifa*), and their end (*ghāya*). According to this account which ultimately starts from *Met.* Γ.2 1004a31-b26, the principles of metaphysics are the certain premises (*al-muqaddimāt al-yaqīniyya*). Its way of investigation is the consideration (*taʿammul*) of a topic from every aspect. Its knowledge goes as far as the topic can be known by a human being. The end of metaphysics is “the comprehension [*wuqūʿ ʿalā*] of the ultimate causes [*quṣwā asbāb*] of all beings” (62).¹⁵¹ Three points stand out in this short but informative account. First of all, it is mentioned that the subject of metaphysics is the universal or common entities like being

¹⁵⁰ As mentioned above, Aristotle often calls the science that studies the principles and causes of being *qua* being wisdom or first philosophy.

¹⁵¹ This characterization of metaphysics as studying universal attributes like being and unity as its subject while having the comprehension of the ultimate causes of all beings as its end seems to be informed by an idea in the Alexandrian Greek introduction to philosophy accounts attached to the beginning of their *Isagoge* commentaries that a definiendum can have a definiens either on account of its subject (*hupokeimenon*), or on account of its end (*telos*), or on account of both: for example, the subject of medicine is the human body but its end is healing it. More on this, see Ammonius: 1.18-2.10; Elias: 5.19-6.22; David: 16.13-19.8. I came to notice this likely background in the Alexandrian Greek commentaries prompted by a point Stephen Menn made to me in this context about the distinction Avicenna makes between the subject (*mawḍūʿ*) and the object of inquiry (*maṭlūb*) in a science.

simpliciter, the one, and the many. So, ontology is part of metaphysics. Moreover, metaphysics also studies the ultimate causes of all beings, and this is the end of metaphysics; so, theology is part of metaphysics, and the science of metaphysics attains its end in the theology part.¹⁵² In other words, ontology serves theology. Finally, the groundwork part of metaphysics is not mentioned here in the description of the subject-matter of metaphysics at all.

Yet, in the *Book of Demonstration* al-Fārābī offers another way to interpret T6 (2) from *On the Aims* which claims that in metaphysics the principles of all the particular sciences and their definitions are made clear. In the *Book of Demonstration*, al-Fārābī is interested in spelling out the epistemic relations between sciences and in particular about how one science can provide the principles of another science. Let me state al-Fārābī's position first, then I will explain it more extensively (though skipping some details in the interest of space). When a science is posterior to another science, the posterior science can demonstrate the *existence* of a principle of the prior science, i.e., it can demonstrate *that* that principle holds, while the prior science can demonstrate the *cause* of a principle of the posterior science, i.e., it can demonstrate *why* that principle holds, or the prior science can demonstrate *both* the cause and the existence of a principle of the posterior science. Although these exact views are not presented by Aristotle in *APo*, the ultimate

¹⁵² There is a confusion a bit below in the *Book of Demonstration* where al-Fārābī gives examples of particular sciences (bottom of 62, top of 63). The edition by Fakhrī that I use consults four mss.: Bratislava 231 (B), Istanbul Hamidiye 812 (H), Tehrān Shūrāy-e Mellī 595 (T), and Tehrān Kermān 211 (K). The editor provides a brief argument in his introduction to v.4 (p.8-9) that B is superior to the other mss., T and K belong to the same branch, H usually agrees with B as opposed to T and K but sometimes H has the additions of T and K as opposed to B. The editor also adds that even though he follows the readings of B by default, on some occasions he uses the readings of T and K to correct B. In the passage I mentioned at the beginning of this footnote, B and H has one reading, and T and K has another. The reading of B and H has “[the examples of the particular sciences are] mathematics, natural science, *al-‘ilm al-ilāhī*, and moral science [*al-‘ilm al-akhlāqī*]” while the reading of T and K has “mathematics, natural science, and political science [*al-‘ilm al-madani*]”. Although Fakhrī prints the reading of B and H here, I agree with the translators Ömer Türker and Ömer Mahir Alper that we should follow the reading of T and K here (p.71 n.8 in their translation). This is because *al-‘ilm al-ilāhī* is either metaphysics (divine science) or a part of metaphysics (theology), and in either case it is clearly considered under or to be the universal science of metaphysics above. As mentioned also in Section 4 below, in late antique Alexandrian introduction to philosophy accounts attached to the beginning of their commentaries on the *Isagoge*, philosophy is divided into theoretical and practical philosophy, and theoretical philosophy is divided into mathematics, natural science, and *theologia* (*al-‘ilm al-ilāhī*). It is possible that a copyist of the ancestor of B and H read *al-‘ilm al-madani* as *al-‘ilm al-ilāhī* under the influence of that tradition. According to this line of thought, a later copyist added *al-‘ilm al-akhlāqī* following the tradition in Arabic philosophy of dividing philosophy (i.e., the demonstrative sciences) simply into mathematics, natural science, *al-‘ilm al-ilāhī*, and moral or political science, and al-Fārābī himself is a representative of this four-way division of philosophy (see Section 4 below). This also supports my contention that T and K has the reading of al-Fārābī's original text with “mathematics, natural science, and political science” because if philosophy is divided into four, and if one of them, *al-‘ilm al-ilāhī*, is already covered under the universal arts, under the particular arts which are parts of theoretical philosophy, we would be left with mathematics, natural science, and political science.

source from which al-Fārābī's develops these views about the distinction between the demonstration of *that* and the demonstration of *why* as well as the relations between prior and posterior sciences (and superior and subordinate sciences) is *APo*, especially I.13.¹⁵³ Applying these views to metaphysics and the particular sciences, al-Fārābī infers that since metaphysics is the universal science, all the particular sciences are under metaphysics and metaphysics is prior to them; so there are the described relations between the principles of metaphysics and the principles of the particular sciences. According to this view ultimately deriving from *APo*, and contrary to the view presented in the *Enumeration* that seems to derive ultimately from *Met.*, metaphysics *demonstrates* some principles of some particular sciences, but moreover, some particular sciences also *demonstrate* some principles of metaphysics. And as I announced above and as it will become clearer in the following, the account of how metaphysics makes clear the principles of the particular sciences developed in the *Book of Demonstration* does not constitute a separate part of metaphysics as it is understood in the *Enumeration* account, i.e., a part where we dialectically expound and defend the principles of the particular sciences. So, a separate groundwork part of metaphysics as described in the *Enumeration* is absent from the account of the subject-matter of metaphysics and how metaphysics relates to other sciences in the *Book of Demonstration*. Yet, as will be specified, according to the *Book of Demonstration* account, there are demonstrative relations between metaphysics and the principles of the particular sciences and we can call this groundwork function of metaphysics if we want.

In the *Book of Demonstration*, al-Fārābī distinguishes three kinds of certain knowledge (*'ilm yaqīn*) and correspondingly three kinds of demonstration (*burhān*). An assent (*taṣdīq*, roughly the belief that a proposition is true)¹⁵⁴ that is necessary and certain (hence true) is called certain

¹⁵³ As will be explained below, I use superior and subordinate to designate two kinds of relations between two sciences that al-Fārābī distinguishes in the *Book of Demonstration*: a science A is superior to another science B either because the subject matter of B is a species of the subject matter of A (e.g., spherics and geometry) or the subject matter of B is “more specific [*akhaṣṣ*]” than the subject matter of A without being a species of it (e.g., optics and geometry). We will see below that al-Fārābī seems suggest that if a science is superior to another science, it is also prior to it. Also, when I talk about similar relations between two sciences in al-Fārābī or Aristotle (like spherics and geometry or optics and geometry) where the exact nature of this relation is not specified, I will simply call them superior and subordinate sciences.

In developing the views discussed here, it seems that al-Fārābī considered also the passing remarks about the relations between the superior and subordinate sciences at *APo* I.7 75b8-20, I.9 76a4-25, and I.12 77a36-b3.

¹⁵⁴ More precisely, as al-Fārābī puts it, “in general, assent [refers to] the fact that someone believes about the entity about which a judgement was made [*amr ḥukima 'alayhi bi-ḥukm*] that it is in its being [*fī wujūdihi*] outside the mind [*dhihn*] just as it is believed to be in the mind; true [assent] [refers in addition to] the fact that the entity is [in fact] outside the mind just as it is believed to be in the mind [*bi-l-dhihn*]” (20, lines 4-6).

knowledge. We can have certain knowledge of the existence (*wujūd*) of something, i.e., of the ‘that’ of the thing (*inna al-shay*’), or of the cause of its existence (*sabab wujūd al-shay*’), i.e., of the ‘why’ of the thing (*lima al-shay*’), or we can have knowledge of both together. The knowledge of the ‘why’ presumes the knowledge of ‘that’ in the sense that we must either obtain the knowledge of the ‘that’ and the ‘why’ together, or if we obtain the knowledge of the ‘why’ alone, we must have already obtained the knowledge of ‘that’ beforehand. A syllogism from necessary and certain premises is called the demonstration of existence, or of the ‘that’ of the thing, if it yields the certain knowledge of the existence of that thing; it is called the demonstration of the cause of its existence, or of the ‘why’ of the thing, if it yields the certain knowledge of the cause of its existence; it is called a demonstration simpliciter (*burhān ‘alā al-īlāq*) if it yields the certain knowledge of both (25-6).

The cause whose knowledge is given by a demonstration of the ‘why’ or by a demonstration of both the ‘that’ and the ‘why’ can be any of the four traditional Aristotelian causes (formal, final, material, efficient) in any mode except for *per accidens*.¹⁵⁵ In a demonstration which gives the knowledge of the cause, the cause is used as the middle term (26-7).

Since by means of a demonstration we come to know that a proposition holds or why it holds or both, the demonstration is the cause of our knowledge of these, but not all demonstrations give the knowledge of the ‘why’, or the cause of existence (26 lines 13-4), namely, the demonstrations that give only the knowledge of the existence of the thing or of the ‘that’.

Al-Fārābī distinguishes several senses of prior (*mutaqaddim*) and posterior (*muta’akhkhir*) in knowledge (*ma’rifa*) and in being (*wujūd*) on p.39-40. For my current purpose, the relevant senses are as follows: X is prior to Y in knowledge just in case we obtain the knowledge of Y

¹⁵⁵ These modes are the following pairs of contraries: near and remote, *per se* and *per accidens*, general and specific, potential and actual (26 line 19- 27 line 1). Of these, except for near and remote, the other pairs are explicitly presented as the main modes (*tropoi*) of the causes by Aristotle in *Met.* Δ.2 1013b28-4a25 ~ *Phys.* II.3 195a26-b30. In addition to these, Aristotle also mentions the compound (*sumplekomenon*) and the simply said (*haplōs legomenon*) as a further contrary pair of the main modes of the causes (e.g., Polyclitus the sculpture is a compound cause in contrast with Polyclitus (or the sculpture) alone), which is left out by al-Fārābī in the passage under consideration. One passage that might have prompted al-Fārābī (or his source) to spell out the pair near and remote is *Met.* Δ.2 1014a4-6 = *Phys.* II.3 195b1-3 under Aristotle’s discussion of the contrary pairs *kath’ hekaston/oikeiōs legomenon* vs. *kata sumbebēkos*. I do not know exactly what Aristotle means there but it seems that what Aristotle means does not match exactly what al-Fārābī means by near and remote causes. Instead, it seems that passages like *Met.* H.4 104b1-3 provide a better place to start to spell out al-Fārābī’s understanding of the near and the remote as a contrary pair of the modes of causes.

from the knowledge of X. In this sense, the premises of a demonstration are prior in knowledge to its conclusion, or we can state the same about the corresponding states of affairs, but more loosely, we can also talk about the priority and posteriority in knowledge between two entities where from the knowledge of the relevant state of affairs about one entity we obtain the knowledge of the relevant state of affairs about the other entity. On the other hand, X is prior to Y in being just in case X is the cause of Y. X and Y could be states of affairs or entities depending on how the relevant causal relation is expressed.

When a demonstration which only gives the knowledge of existence is concerned, we deal with two things where one is prior to the other in knowledge but is not prior in being. On p.40-1 of the *Book of Demonstration*, al-Fārābī distinguishes two main cases of demonstrations (with more sub-cases) which give only the knowledge of existence, following Aristotle's parallel discussion at *APo* I.13 78a26-b31. In the interest of space, I will mention only two of al-Fārābī's examples. Consider the following syllogism in the first figure with a universal affirmative conclusion. Let A stand for being spherical, B for having the light which grows gradually each day (i.e., in that very pattern that is also observed in the phases of the moon), and C for the moon. (1) A belongs to all B (i.e., anything whose light displays that pattern over time is a spherical object); (2) B belongs to all C (i.e., the moon has the light which displays that pattern); therefore, (3) A belongs to all C (the moon is spherical). In this demonstration, we show *that* the moon is spherical, but we do not show *why* the moon is spherical. The middle term here, i.e., having the light which displays that pattern is not the cause of having a spherical shape. Rather, it is the other way around; because the moon has a spherical shape, it has the light which displays that pattern. And this demonstration of the '*why*' can be expressed as follows using the same variables standing for the same things: (1) B belongs to all A (any spherical thing has the light which displays that pattern); (2) A belongs to all C (the moon is spherical); therefore, (3) B belongs to all C (the moon has the light which displays that pattern). In this transposed demonstration, the cause, i.e., A (being spherical) is used as the middle term. In the original demonstration, the effect, i.e., B (having the light which displays that pattern) was used as the middle term. In short, in reality being a spherical object is prior in being to having the light which displays that pattern; according to the original demonstration (of the '*that*'), having the light which displays that pattern is prior in knowledge to being a spherical object, but according to the transposed

demonstration (of the ‘*why*’) what is prior in being, i.e., being a spherical object, is also prior in knowledge.

Sometimes, we have a demonstration of the ‘*that*’, but we do not get a demonstration of the ‘*why*’ by transposing it. Smoke is prior in knowledge to fire. So, from the fact that, e.g., there is smoke coming out of the next room, I can come to know that there is fire in the next room. But according to al-Fārābī, fire is not prior in being to smoke, which seems to mean that he does not think that fire always produces smoke. So, the fact that there is fire somewhere is not enough for me to explain *why* there is smoke there because I do not even know *that* there is smoke there *from the very fact that* there is fire there. In other words, it seems that fire is a necessary condition for smoke but not a sufficient one, and as such, fire is not the cause of smoke in the relevant technical sense here. The difference between the two cases, put in terms of the syllogistic technique, is that in the former case the cause and the effect convert (e.g., being spherical and displaying that pattern convert) while in the latter case the cause and the effect do not convert (e.g., as al-Fārābī implies in this example, the presence of fire in a place does not convert with the presence of smoke in that place; rather, the presence of fire in a place is strictly more extensive than the presence of smoke in that place) (see, in particular, 40 line 15 - 41 line 9).

Al-Fārābī calls the demonstrations which give only the knowledge of the ‘*that*’ *dalā’il* (sg. *dalīl*), especially if what is prior in being is known by what is posterior in being. He adds that the middle term in such demonstrations is also called a *dalīl*. So, in the example above, having its light displaying that pattern is a *dalīl* for the spherical shape of the moon and smoke is a *dalīl* for fire (41 lines 22-4). Since the usual translation of “*dalīl*” as proof or evidence is too general here, I will use this Arabic term without translating it into English.¹⁵⁶

We already saw a demonstration of the ‘*why*’ by transposing the syllogism about the shape of the moon and its phases. More generally, the demonstration of the ‘*why*’ proceeds from what is prior in being, i.e., the real cause, into what is posterior in being, i.e., its effect. As already mentioned, in a demonstration of the ‘*why*’, the middle term should be one of the four Aristotelian causes.

¹⁵⁶ It seems that the *kalām* tradition had an influence on the use of *dalīl* as a term of art in this specific sense, but Stephen Menn pointed out to me that the use of the Greek word *tekmerion* as technical term in philosophical and scientific literature seems to be in the background too.

Al-Fārābī seems to suggest that if the middle term is the efficient or the material cause, we would have a demonstration which gives the knowledge of the ‘*why*’ alone without that of the ‘*that*’, while if the middle term is the final or the formal cause, we would have a demonstration which gives the knowledge of both the ‘*why*’ and the ‘*that*’ together (42 lines 10-9).¹⁵⁷

¹⁵⁷ Although al-Fārābī does not explain why he claims this, perhaps his reasoning is that, at least in the case of the production of natural substances and artifacts, the presence of the efficient cause and the presence of the matter or the subject do not necessarily entail the presence of the effect, i.e., the form-matter / subject compound we want to explain (e.g. a human offspring, a sculpture), while the presence of the relevant particular form would entail the presence of that effect. To illustrate what I mean, let me give an example of a case with an artifact; the presence of the stone and the presence of the sculptor do not necessarily entail the actual presence of the sculpture, but the presence of the particular form of this sculpture entails the presence of the sculpture. That the matter / subject and the efficient cause which has the form of the effect in it (e.g., a parent human or a sculptor *qua* sculptor) exist before the effect is something Aristotle expresses also in the *Metaphysics* (see *Met.* Z.8-9 and Λ.3-4), and in particular, Aristotle states at *Met.* Λ.3 1070a21-24 that the efficient cause exists before the effect while the formal cause, by which he apparently means the particular form of the effect, exists at the same time as the effect; he gives the following example to illustrate this: “for when the human is healthy, then also health [*hē hugieia*] exists, and the shape [*to schēma*] of the bronze sphere exists at the same time as the bronze sphere.” It might be argued in addition that Aristotle identifies the formal cause with the final cause (see, e.g., *Phys.* II.7 198a24-6 and *PA* I.1 639b14-6; that said, this identity claim is watered down at *GA* I.1 715a4-6 (“*hōs hen ti schedon hupolabein dei*”) and *Met.* H.4 1044a36-b1 (“*isōs de tauta amphō to auto*”); in particular, see below in this footnote my discussion of the unmoved movers of the heavens in *Met.* Λ where these unmoved movers seem to be the efficient causes of the motions of the heavens by being their final causes), and hence if the presence of the formal cause entails the effect, the presence of the final cause would also entail the effect. That said, al-Fārābī does not seem to think that the formal and the final causes are identical; so, we need another explanation for why al-Fārābī holds that the presence of the final cause, like the presence of the formal cause, entails the presence of the effect, but I am not aware of any other good explanation.

Al-Fārābī does not seem to think that the formal and the final causes are identical because he says in *KH* 16 that “the efficient cause [*al-fā’il*] and the final cause [*al-ghāya*] are indeed [*qad yakūnu*] external to the thing and separate from it” (p.69 lines 10-1) (See Reckendorf 155.3 (p.302-3) and Lane 2491a for the use of *qad* + imperfect in the sense of affirming (“bekräftigend”) (I was alerted to this use of *qad* by Rotraud Hansberger); or perhaps here it means that they “*might be external...*” if this *qad* + imperfect has the weakening sense). He makes apparently a more comprehensive claim in *KH* 237 that natural science studies all the causes of natural things, that is, it studies “of [the causes] what is external, i.e., the efficient cause and the final cause, and that which is in the thing itself;” it is clarified a few lines below that al-Fārābī talks about all the four traditional Aristotelian causes here. So, in *KH* 16 too but more clearly in *KH* 237, it holds by implication that the formal and the material causes are internal to the thing. So, it seems that in all the relevant cases where the four causes pertain, or at least in some of these cases, the final and the formal causes come apart because the final cause is external to the thing, but the formal cause is internal to it. Somewhat similarly, al-Fārābī claims in the *Book of Demonstration* that the parts of the definition (i.e., definiens) of something by which this thing exists could be in the thing itself or external to the thing (46 lines 11-2); further down, he specifies that there are three kinds of such parts of the definition which are external to the thing: 1. the final cause (*ghāya*), 2. the efficient cause (*fā’il*), and 3. “the thing in which the definiendum [*al-mahdūd*] is” (48 lines 1-2). What al-Fārābī means by the third group is not entirely clear. His example of a definition which cites the final cause and “the thing in which the definiendum is” together is the definition of the soul as “the *entelecheia* [*istikmāl*] of a natural organic body from which grasping [*idrāk*] and the activities [*af’āl*] that follow grasping emerge [*yaṣḍuru ‘anhu*];” according to al-Fārābī, “from which grasping and the activities that follow grasping emerge” indicates the final cause of the soul and “a natural organic body” indicates “that in which the soul is” and both of these are external to the soul (48 lines 3-9). It appears that what al-Fārābī means by this third group of things which are cited in the definition of something while being external to it are the subjects of the definiendum without being its matter in the sense of the matter of the composite substance, but what complicates this picture is that right before al-Fārābī starts to talk about these three groups of the parts of the definition of something which are external to it on p.48, he seems to be talking about the parts of the definition of something which are internal to it, and in this

Al-Fārābī claims that all the particular sciences are “under [*taḥta*]” metaphysics and this seems to be so because the subjects of the particular sciences are under “being simpliciter [*al-mawjūd ‘alā al-iṭlāq*]” which is the subject (or among the subjects) of metaphysics (65 lines 19-21). One science’s being “under” another science is a technical term for al-Fārābī. He asserts that two sciences differ either because their subjects are different by themselves (*bi-dhawātihā*), or their subjects are different in their conditions (*bi-aḥwālihā*). Al-Fārābī does not describe the first case in detail and one of the examples he gives for the first case is confusing.¹⁵⁸ He describes the second case more clearly. The second case has three sub-cases. Considering two sciences X and Y, (1) X is part (*juz*) of Y just in case the subject of X is the species of the subject of Y; as an example of this sub-case, al-Fārābī mentions that conics is part of geometry because cones are

preceding discussion, he also discusses a modified version of one of Aristotle’s favorite examples of a definition in *APo* II.1-10, namely the definition of thunder as the sound in the clouds due to the vibration (*tamawwuj*) of the wind in the clouds (in Aristotle’s original version, it is due to the extinction of fire, i.e., lightning); one would expect al-Fārābī to classify the “cloud” with respect to the definition of the thunder along with the “natural organic body” with respect to the definition of the soul, but he does not seem to do so. In any case, al-Fārābī’s claim that in all the relevant cases where the four causes pertain, or at least in some of these cases, the efficient and the final causes are external to the thing while the material and the formal causes are internal to it seems to find its source in *Met.* Λ. According to Aristotle’s summary of the principles and the causes of perceptible beings (and perceptible substances in particular because things in the other categories depend on substances) in *Met.* Λ.1-5, there are four principles or causes: the (positive) form, the privation, the matter or the underlying subject, and the efficient cause (i.e., “the moving cause [*to kinoun aition*]” which, along with some other similar formulations, is among Aristotle’s typical expressions for what is translated as the “efficient cause” into English). So, we have the formal causes (the opposite forms, one being the (positive) form and other the privation e.g., health and disease), the material cause (e.g., human body), and the efficient cause (e.g., the doctor, or more precisely, the art of medicine) but there is no clear mention to the final cause here. Aristotle says that the efficient cause is external (*exo*) to the thing, while the other three are components of it (*enhuparchonta*); this is why the other three are called the elements (*stoicheia*) of the thing, while the efficient cause is not called an element (*Met.* Λ.4 1070b22-35; also see Λ.5 1071a13-17). So, it seems that this account in Λ.1-5 is ultimately behind al-Fārābī’s claim that the material and the formal causes are internal to the thing, but the efficient cause is external to it. Although, as I mentioned right above, Aristotle does not seem to take into account the final cause in the account of *Met.* Λ.1-5 in any clear way, he seems to suggest later on that the movers of the heavens, being unmoved movers, move the heavens as an object of desire moves the desiring thing, i.e., as a final cause (*to hou heneka*) (Λ.7 1072a19-b13); so at least in some cases of unmoved movers, if not all, the mover, or the efficient cause (*to kinoun*) moves something by virtue of being the final cause for that thing. This would suggest that at least in those cases where the efficient cause of something (*fā’il*) is its efficient cause by being its final cause (*ghāya*), the final cause would be external to that thing.

¹⁵⁸ As examples of sciences which differ because their subjects differ by themselves, al-Fārābī mentions “the subject of arithmetic, and the subject of geometry or natural science” (64 lines 7-8). I understand why he would say that arithmetic and geometry differ because their subjects differ by themselves as the subject of arithmetic is not ‘contained’ under the subject of geometry, nor the other way around; so arithmetic and geometry should not be classified under the sub-cases of the sciences which differ not because their subjects differ by themselves but only because the conditions of their subjects differ (more on these sub-cases, see the following in the body of the text). That said, al-Fārābī also mentions natural science, and as I also summarize below in the body of the text, he gives mathematics and natural science as examples of the third sub-case of the sciences which differ not because their subjects differ by themselves but because the conditions of their subjects differ.

species of solid figures.¹⁵⁹ (2) X is under (*taḥta*) Y just in case the subject of X is more specific (*akḥaṣṣ*) than the subject of Y in a way that does not render its subject a species of the subject of Y. For example, the study of spheres simpliciter is a part of geometry (because spheres are solid figures); the study of the moving spheres (as in Autolycus' work of the same name, used in astronomy) is under geometry, but it is not a part of geometry because the moving spheres are not simply solid figures. Optics is also not part of geometry but is under it. The third sub-case of two sciences which differ not because their subjects differ by themselves but because the conditions of their subjects differ is that (3) of X and Y neither is part of the other nor is under the other; e.g., mathematics and natural science. Al-Fārābī implies that these two differ not simply because their subjects differ by themselves but even though their subjects are the same (bodies/solids (*ajsām*) and lengths (*aṭwāl*)), mathematics studies them “insofar as they are measured,” while natural science studies them “insofar as they are in motion or insofar as they are material [*hiya mādda*]” (64).

So, the subjects of the particular sciences are not species of the subject of metaphysics (i.e., being simpliciter), strictly speaking, but they are more specific than being simpliciter and in this respect the particular sciences are under metaphysics. Al-Fārābī asserts that a science which is under another science has two groups of principles. The first group contains the principles which are proper to the subordinate science (*takḥuṣṣu*). The second group contains the principles which are taken from the superior science.¹⁶⁰ Some of the principles taken from the superior science are also principles in the superior science. For example, the principle that two magnitudes which are equal to a magnitude are also equal to each other is a principle of geometry. This is also used as a principle in optics either as such or as adopted to the proper terms of optics. On the other hand, some of the principles taken from the superior science are not also principles in the superior science, but rather, they are demonstrated in the superior science. As an example, al-Fārābī

¹⁵⁹ Conics studies primarily not cones but conic sections (parabola, hyperbola, and ellipse) which are plane figures, but this does not make a difference for al-Fārābī's point that conics is a *part* (*juz'*) of geometry.

¹⁶⁰ Al-Fārābī's claim here simplifies his considered view on how a science or art can take some of its principles from another art or science. As we will see below, according to him, a subordinate science can also demonstrate some principles of its superior science. Also, we will see below that a science can use the premises demonstrated in another science even though one is not part of or under another (e.g., geometry uses premises demonstrated in arithmetic). Finally, we will see below that some principles are formed from experience (*tajriba* = *empeiria*), and a science or art might take the results of experience from another science or art to form some of its principles. This is definitely short of demonstration, but still in a way a science takes a result obtained in another science or art and posits it as its principle.

mentions that the claim that the side of a hexagon inscribed in a circle is half of the diameter of the circle is used as a principle in astronomy (*‘ilm al-nujūm*)¹⁶¹ but it is demonstrated in its superior science, geometry¹⁶² (65). Al-Fārābī claims that “[1] this science [sc. metaphysics] sometimes uses general premises [*muqaddimāt ‘amma*] which are used by all the particular sciences in the way we mentioned before, and [2] the particular sciences use premises which are demonstrated in that [sc. metaphysics]” (65 lines 21-2). There is little doubt that the “general premises” in (1) refer to the principles of metaphysics that are also used as principles in the particular sciences, and even though al-Fārābī does not specify what these “general premises” are, they presumably include the common principles like the principles of non-contradiction and excluded-middle. As for the principles in the particular sciences which are demonstrated in metaphysics, al-Fārābī gives an example: “one thing is the contrary of one thing”¹⁶³ (65 lines 23-4).

¹⁶¹ Astronomy (*‘ilm al-nujūm*) is not to be confused with astrology (*aḥkām al-nujūm*) (I should add that LSJ records that the Greek term *astrologia* originally meant astronomy, but it also assumed the sense of astrology (the passage cited here for the sense of astrology is from Sextus Empiricus). Argyro Lithari pointed out to me that as we can see most notably in Ptolemy’s *Tetrabiblos* a common ancient Greek adjective for astrology as opposed to astronomy was “*apotelesmatikos*”). As al-Fārābī claims further down on p.71 lines 16-22, of the arts in which experience (*tajriba*) is used, some limit themselves to what comes about by experience (*mā yaḥṣulu bi-l-tajriba*) alone, while others also use what comes about by experience to infer (*istinbāt*) the knowledge of something else. Astronomy (or mathematical astronomy (*‘ilm al-nujūm al-ta līmī*) as it is called here) is an example of an art which uses experience to infer the knowledge of other things while astrology and “most practical arts [*kathīr min al-ṣinā ‘āt al-‘amaliyya*]” limit themselves to the results of experience alone. More on this passage from the *Book of Demonstration*, see below. Al-Fārābī’s treatise called *Fī Aḥkām al-Nujūm (On Astrology)* presents a much more detailed account of astrology; in this treatise al-Fārābī presents a negative picture of astrology in terms of its usefulness and epistemic value in contrast with astronomy.

Recall that al-Fārābī either uses “art [*ṣinā‘a*]” and “science [*‘ilm*]” interchangeably in the *Book of Demonstration*, or “art” is the more general term comprising also the sciences. So, calling astronomy an art here does not mean that it is not a theoretical science.

¹⁶² I do not know exactly how this claim was used in astronomy but my guess is that on the assumption that a heavenly body rotates around the earth on a circular orbit, if we measure an earlier and a later position of this heavenly body at an angle which is one sixth of four right angles, i.e., if these two positions are modeled to stand at the two consecutive vertices of the hexagon inscribed in its circular orbit, the distance between its earlier position and its later position would be equal to its distance from the earth, i.e., the radius of its circular orbit.

¹⁶³ الواحد يضاد الواحد. This principle is mentioned in the first statement of the fifth aporia about the subject matter of metaphysics (*Met.* B.1 995b18-27). In this aporia, Aristotle asks whether in addition to the other things mentioned in this aporia metaphysics also seeks an answer to the question “is one thing the contrary of one thing [*ἓνα ἔν ἐνὶ ἐναντίον*]” (995b27). Aristotle addresses this aporia as a whole throughout Γ.2 but especially starting at 1004a31. In particular, in a rhetorical question, he affirms that the philosopher and no one else investigates, among other things, “whether one thing is the contrary of one thing [*εἰ ἔν ἐνὶ ἐναντίον*]” (1004b3). Aristotle provides an argument for this claim at Iota 4 1055a3-23. In short, he argues that since contrariety is the greatest (*megistē*) and the complete (*teleia*) difference in that in which two things differ more or less, there must be two contraries, i.e., one contrary for one thing. Aristotle seems to assume that when things differ more or less, they are on a linear scale; since the scale is finite, it must have exactly two extremities.

So the superior science demonstrates some principles of the subordinate science. Recall that a demonstration can be a demonstration of the ‘*why*’ or a demonstration of the ‘*that*’ or of the both. In the passages under consideration so far, al-Fārābī does not specify whether metaphysics demonstrates merely *that* a principle like “one thing is the contrary of one thing,” or it demonstrates *why* such principles hold, or it demonstrates both. Al-Fārābī seems to address this in the following discussion. He argues that the premises demonstrated in a science can be used as causes or as *dalīls* in another science. If “what is contained [*mā yashtamilu ‘alayhi*]” in science A is prior in being to what is contained in science B, science A can provide the knowledge of the causes of things in science B, or science A can provide the knowledge of both the existence and the causes of things in science B. On the other hand, things in the posterior science, B, could be better known to us; if this is the case, science B can provide only the knowledge of the existence of things in science A. In this sense, the prior and the posterior sciences cooperate (66 lines 5-11). This passage does not specify if what is demonstrated in the prior science is the cause (and the existence) of the *principles* in the posterior science or the cause (and the existence) of *other things* in the posterior science (i.e., things already demonstrated in this posterior science in some other way). This passage does not also specify if the existence of the principles or of some other things in the prior science are demonstrated in the posterior science. It seems conceivable that al-Fārābī here talks about *also* the things other than the principles in these sciences because as al-Fārābī goes on to discuss, there are cases where the same thing is demonstrated in different sciences in different respects (starting further down on p.66 at line 20); that said, his emphasis in this passage seems to be on the cases where the *principles* of one science (either its ‘*that*’ or its ‘*why*’ or both) are demonstrated in another science. So, al-Fārābī seems to suggest here especially that assuming that A is a prior science and B is a posterior science, in science A we can demonstrate *why* some *principles* in science B hold or both *that* and *why* some *principles* in B hold, while in science B we can demonstrate only *that* some *principles* in science A holds. In fact, that the prior science sometimes gives the knowledge of the cause of the *principles* in the posterior science is explicitly confirmed by al-Fārābī on p.70 lines 9-11.¹⁶⁴ That the posterior

¹⁶⁴ “It was made clear that the art which is prior in being gives the causes of the first principles in the posterior art. It is not impossible that a posterior art takes its principles from a number of arts; then each of these [arts] come to give the causes of some of its [sc. the posterior art’s] principles.” There is no reason to assume that al-Fārābī means here that a prior science *only* demonstrates the ‘*why*’ of a principle of a posterior science and never demonstrates both the ‘*why*’ and the ‘*that*’ of a posterior science. It is clear from the context of this quoted passage that metaphysics is meant to be such a prior science and the particular sciences are posterior with respect to metaphysics.

science sometimes gives the knowledge of the existence of the *principles* in the prior science is confirmed by al-Fārābī's example on p.66 that a posterior science (astronomy) demonstrates the existence of the principles of some prior sciences (natural science and metaphysics).¹⁶⁵

Moreover, as we will see in the following T9, the superior science seems to be prior to the subordinate science in the sense that things studied by the superior science are prior in being to the things studied in the subordinate science. If so, a superior science like metaphysics would demonstrate *why* some principles in the particular sciences hold (or both *why* and *that*), and in turn, some particular sciences would provide *dalīls* for the principles of metaphysics, i.e., they would demonstrate only *that* some principles of metaphysics hold. That said, the relevant prior / posterior relation between the sciences does not seem to be exhausted by the relevant superior / subordinate relation between the sciences. In other words, it seems that there are some pairs of sciences, say A and B such that A is prior to B in some relevant sense but B is not under A (nor is B a part of A). That the superior sciences are prior to the subordinate sciences and that there are prior sciences which are not superior is confirmed by the example al-Fārābī gives to illustrate the cooperation between a prior and a posterior science:

T9 *Book of Demonstration*, 66 lines 11-19

... تُستعمل أشياء تبرهنّت في علم النجوم مقدّمات أول في الفلسفة الأولى وفي العلم الطبيعي. فعلى هذه الجهة تكون العلوم المتقدمة والمتأخرة متعاونة على المعارف التي تحصل في كل واحدة منها. أما المتقدمة فإنها تعطي في العلوم المتأخرة معرفة الأسباب أو الأسباب والوجود معاً، والمتأخرة تعطي في المتقدمة الوجود. وذلك مثل ما تعطيه صناعة

More generally, as I explain in the following, al-Fārābī seems to take superior sciences (like metaphysics) to be prior to the subordinate sciences (like the particular sciences). As I pointed out above, al-Fārābī explicitly says that some principles demonstrated in metaphysics like the principle that one thing is the contrary of one thing are not demonstrated in any particular science but are used as principles in them; since al-Fārābī says that no other science demonstrates this principle, he seems to mean here that metaphysics demonstrates both the '*that*' and the '*why*' of this principle. Since al-Fārābī takes metaphysics to be prior to the particular sciences, this would constitute an example of a prior science demonstrating both the '*that*' and the '*why*' of a principle of a posterior science.

¹⁶⁵ The example itself is presented at lines 11-12 but the relevant discussion starts at line 5 which is summarized above. This example is also reproduced at the beginning of T9 below.

النجوم في كثير مما في العلم الطبيعي <والفلسفة الأولى>¹⁶⁶ فإنها تعرف¹⁶⁷ في أشياء كثيرة مما في العلم الطبيعي والفلسفة الأولى وجودها لذلك العلم الطبيعي والفلسفة الأولى. وأما العلم الطبيعي فإنه يوقف في كثير من علم التعاليم على أسبابه أو على الأمرين جميعاً، وكذلك الفلسفة الأولى في العلم الطبيعي وفي التعاليم.

... things demonstrated in astronomy [*ilm al-nujūm*] are used as primary premises [*muqaddimāt uwal*] in first philosophy and in natural science. In this respect, the prior sciences and the posterior sciences cooperate for the knowledge which comes about [*tahṣulu*] in each of [these sciences]. The prior [sciences] provide the knowledge of the causes or both the causes and the existence in the posterior sciences, while the posterior [sciences] provide [the knowledge of] the existence [only] in the prior [sciences]. This is like [the knowledge] that astronomy [*ṣināʿat al-nujūm*] provides regarding many things in natural science and first philosophy, for it [sc. astronomy] makes the existence of many things in natural science and first philosophy known [*tuʿarrifu*] for that natural science and first philosophy. On the other hand, natural science informs about [*yūqifu ʿalā*] the causes or both things [i.e., the existence and the cause] of many things from mathematics;¹⁶⁸ it is likewise with first philosophy with regard to natural science and mathematics.

As mentioned above, astronomy is not part of geometry, but it is under geometry.¹⁶⁹ Al-Fārābī says in this passage that astronomy gives the knowledge of the existence (= ‘*that*’) of some principles of natural science and metaphysics.¹⁷⁰ In turn, it is implied that natural science gives the knowledge of the cause (= ‘*why*’) of some *principles* of mathematics, or their knowledge of both the existence and the cause. Likewise, it is implied that metaphysics gives the knowledge of the cause only, or both of the existence and the cause of some *principles* of mathematics and

¹⁶⁶ My addition. In the printed text, the following clause فإنها تعرف في أشياء كثيرة مما في العلم الطبيعي is put in brackets as a parenthetical remark, but if we put that clause aside, the remaining sentence does not make good sense. With the bracketed clause put aside, the sentence reads وذلك مثل ما تعطيه صناعة النجوم في كثير مما في العلم الطبيعي والفلسفة الأولى وجودها: in this case, we have only one verb, تعطي: its subject is صناعة النجوم and it already has one object, the pronoun referring back to ما. It seems that وجودها should also be the object of this verb, and this verb can indeed take two objects, but then the sentence would not make good sense. As can be seen from my translation, the whole sentence makes good sense if we add والفلسفة الأولى as I do. As the first sentence of T9 makes it clear, al-Fārābī thinks that some premises demonstrated in astronomy are used as principles in natural science and first philosophy.

¹⁶⁷ The printed text has يُعرف (with that vocalization), but I could not figure out how that is supposed to work syntactically. That is why I read it as تُعرف.

¹⁶⁸ Probably in some ‘applied’ branches of mathematics like astronomy.

¹⁶⁹ To repeat, on p.65 in the *Book of Demonstration*.

¹⁷⁰ As I discuss below in Section 5, the shape of the heavens and their regular circular motions seem to be examples of the facts of which the knowledge of ‘that’ (i.e., that these facts hold) is provided by astronomy to natural science.

some *principles* of natural science.¹⁷¹ First of all, all the mathematical sciences and the natural sciences, as particular sciences, are under metaphysics. So according to this passage, some sciences under metaphysics provide the knowledge of the existence of some principles of metaphysics. Al-Fārābī suggests in this passage that astronomy directly provides the knowledge of the existence of some metaphysical principles. I will suggest below in light of a related account in the *Attainment* that al-Fārābī's considered opinion seems to be that astronomy (as well as some other mathematical sciences) cooperate directly with natural science, and then the study of the heavenly bodies in physics and the study of the intellects in psychology provide directly the knowledge of the existence of the separate intellects studied by the theology part of metaphysics and their investigation would yield the knowledge of the existence of God, the study of whose attributes, in turn, would yield the knowledge of the cause of the separate intellects. The study of the attributes of the separate intellects would yield the knowledge of the causes of the things in the natural world (in some cases also both the causes and the existence of things in the natural world whose existence is not made evident in the natural sciences themselves). All I want to emphasize here is that the superior and the subordinate sciences (i.e., one science under another) seem to have the relevant sort of prior / posterior relation. The second point I want to make is that this prior / posterior relation is not limited to the superior and subordinate sciences. Mathematics (or at least astronomy) is presented as such a posterior science and natural science is presented as such a prior science, but as I pointed out above, neither is mathematics under natural science, nor is natural science under mathematics (one is not part of the other either).¹⁷² Moreover, we saw above that arithmetic is not under geometry, nor is geometry under arithmetic (and one is not part of the other either),¹⁷³ but al-Fārābī adds that geometry uses premises demonstrated in arithmetic (65 lines 3-4) (though, he says, arithmetic does not use any premise demonstrated in any other science (65 lines 11-2)).

In short, the things studied by metaphysics are prior in being to, i.e., the causes of the things studied in the particular sciences. That said, the things studied by the particular sciences are

¹⁷¹ Indeed, metaphysics gives the knowledge of the ultimate causes of beings (*asbāb al-mawjūdāt al-quṣwā*), and in this respect it is the leading (*ra'īsa*) art of all the arts (70 lines 12-4).

¹⁷² See the *Book of Demonstration*, 64.

¹⁷³ Mentioned in Footnote n.158 above. To repeat, on p.64 at lines 7-8, among the examples of sciences which differ because their subjects differ by themselves, al-Fārābī mentions that “the subject of arithmetic and the subject of geometry” differ by themselves. So, it is implied that arithmetic and geometry do not differ only because their subjects differ in their conditions; it follows that one is not part of the other, nor is one under the other.

better known to us, i.e., they are initially prior in knowledge to the things studied by metaphysics; so, we use some of the things studied in the particular sciences to produce *dalīls* for the things studied in metaphysics. This is the main point I wanted to get out of my discussion of al-Fārābī's *Book of Demonstration* but let me complete this picture by summarizing the rest of al-Fārābī's account of the principles of sciences. A principle of a science is either taken from another science in the sense that its existence or cause or both are demonstrated in another science, or a principle of a science is not taken from any science in the sense that there is no demonstration of its cause or existence in any other science. Al-Fārābī calls the former sort of principles *relative principles* (*bi-l-qiyās*) because they are principles in a science but they are demonstrated in another science, so they are not absolutely primary. He calls the latter sort of principles *absolute principles* (*'alā al-iṭlāq*) (70 lines 21-3). We talked about how relative principles are demonstrated in a prior or posterior science. The absolute principles are of two kinds: first the self-evident truths and second, the principles which come about by experience (*al-ḥāṣila bi-l-tajriba*).¹⁷⁴ The principles which come about by experience can be taken from

¹⁷⁴ What I called the self-evident truths are described in this passage as the claims such that “one finds his soul [*naḥṣahu*] as if it has a natural disposition to [*al-maḥṣūr 'alā*] assent to them [*al-taṣdīq bihā*] from the very beginning, without being aware of [*yadrī*] the respect in which they came about [*min ayy jiha ḥaṣalat*] nor how they came about” (71 lines 12-3). Al-Fārābī has a more detailed discussion of these two kinds of absolute principles earlier in the *Book of Demonstration* on p.23-5, where he calls these principles “the universal premises about which necessary certainty [*al-yaqīn al-darūrī*] comes about not from a syllogism” and they are said to be of two kinds: one “comes about by nature [*al-ḥāṣil bi-l-ṭibā'*],” and the other “comes about by experience [*al-ḥāṣil bi-l-tajriba*]” (23 lines 3-4). As for a principle which comes about by nature, al-Fārābī adds that we attain its certainty “without knowing from where it came about nor how it came about and without our awareness of the period in which we were ignorant of it; [we attain its certainty] without desiring [*tashawwaqnā*] its knowledge or without making it an object of inquiry [*maḥlūb*] at any time, but we find our souls as if they have a natural disposition to it from the beginning of our coming into being, and as if it is innate [*gharīzī*] to us without us being devoid of it [at all]” (23 lines 4-8). Al-Fārābī goes on to argue that in logic we do not need to know the respect in which such universal propositions (*muqaddimāt kullīyya*) which are the principles of sciences come about in us but this topic is studied in other sciences. Yet, he brings up one view about how they come about, and he argues that this view is wrong. He notes that “it seems [*yāzharu*] from most of these universal propositions that their individuals [*a 'yānahā*] are perceptible and for this reason a group of people claimed that they come about from perception.” Al-Fārābī argues that even if we grant that the perception of their individuals is the starting point of the cognition of such propositions, the perception of such individuals cannot be sufficient to produce the cognition of such universal propositions which are the principles of sciences: “even if [such principles] come about from perception [*al-ḥiss*], there is no competence [*kifāya*] in perception alone for them to come about in full [*'alā al-tamām*] because if, about them, we limit ourselves to the range of what we perceived, and since we only perceive a limited number of their individuals, it follows that there must come about for us [only] particular propositions [*muqaddimāt juziyya*] about them, and not universal ones but we do find them coming about as universals so that we come to make a general judgement [*ḥukm 'amm*] about the subjects of these propositions with [this judgement] comprising both what we perceived as well as what we did not perceive. From this it is clear that the soul has an activity [*fi'l*] on the perceptible things which is greater than our perception of them” (24 lines 7-14). After arguing against the view that the cognition of such universal propositions which are the principles of sciences come about from perception alone, al-Fārābī repeats that such difficult issues do not need to be discussed in a work on logic and he concludes with a non-committal statement that he will not discuss

here whether the soul has a specific power to grasp these things without our perceiving their particulars (*juz 'iyyātihā*) first or we gain their knowledge only after we perceive their particulars. I will not discuss intellectually grasping, or intellection, (*'aql*) in detail and whether in these cases or in general it must be preceded by the perception of the particulars of the universal that is intellectually grasped (*yu 'qalu*). Nonetheless, it is clearly stated in the passage quoted above that according to al-Fārābī we are born, at least, with a *propensity* to grasp what I called the self-evident truths. As I briefly mention also below in Section 5, al-Fārābī asserts in his *Philosophy of Aristotle* 97 that there are some primary intelligibles (*al-ma 'qūlāt al-uwal*) which are used for grasping the other intelligibles. These primary intelligibles seem to include what I called the self-evident truths above. Moreover, in the same paragraph in the *Philosophy of Aristotle*, al-Fārābī further asserts that the Active Intellect produces the primary intelligibles in the potential intellect that we are born with, and it also gives the potential intellect the propensity to grasp the other intelligibles.

As described above in Section 2, al-Fārābī has a simpler account of the principles of sciences and arts in *Directing Attention* 233-7 but this account has some interesting details we do not find in the more elaborate *Book of Demonstration* account of the principles of sciences. According to the *Directing Attention* account, there are knowledge of two kinds of things: of the first kind everyone with the sound mind has knowledge. The knowledge of the first kind of things is innate; we have their thoughts (*al-ma 'ānī al-ma 'qūla*) in our mind from the very beginning even though we might not be aware of this or these thoughts might be in a confused state in our mind. We obtain the knowledge of the second kind of things from the knowledge of the first kind of things. These things of the first kind are the principles (*awā'il*) of sciences. So far, this account resembles the account of the two kinds of knowledge and the first premises (*al-muqaddimāt al-uwal*) of the sciences at the beginning of the *Attainment* that I summarize below in Section 5 Footnote n.203. However, there are two interesting details in the *Directing Attention* account. First, one of the examples of the knowledge of the things of the first kind al-Fārābī gives in the *Directing Attention* account is the knowledge of the fact that “human is different from horse [*anna al-insān ghayr al-faras*]” (233). This principle seems to turn on simply grasping the meanings of the terms “human” and “horse.” In a similar vein, al-Fārābī goes on to argue that when we are not aware of the fact that we already have the thought of a first kind of thing in our mind, we can be brought to the awareness of this fact by hearing an expression denoting this thing; similarly when we have the thoughts of some of the things of the first kind in a confused state in our mind, hearing distinct (*mutabāyin*) expressions denoting them help us separate them and grasp them distinctly (234-5). Al-Fārābī infers from this that it is useful to know what sort of expressions are used to denote what sort of things for these two purposes of linguistically prompting the awareness of the fact that the thoughts of the things of the first kind are already in our minds or linguistically prompting the clear and distinct grasping of such thoughts which are in a confused state in our minds. Hearing expressions denoting such things seems to be a rather simple description of how such cognitive processes can be prompted; nonetheless, along with the example of a principle that human is different from horse, this emphasis on the role of the meanings of words in our clear understanding of the thoughts of the first principles which we have from the very beginning although sometimes without an awareness of this fact or only in a confused state suggests that such principles of a science would include the definitions of the basic terms of this science which a competent speaker of the language would recognize. In other words, combining this insight with the account from the *Book of Demonstration* presents this picture: when we consider the absolute principles of all the sciences (i.e., the principles of a science which are not demonstrated in another science), we would see that we have two kinds of principles. We gain the first kind through experience. The second kind, i.e., the self-evident truths, includes two groups of principles; first, some basic structural or regulative rules like the principle of non-contradiction or that the whole is greater than the part (perhaps the principles of practical philosophy or “the principles of practical things [*mabādi' al-ashyā' al-'amaliyya*]” as al-Fārābī calls them in his *Book of Dialectics* like religious and familial piety, helping those in need, doing good (*ihsān*) to those who do good to others, being grateful to one's benefactors etc. (v.3 p.75; cf. *Top.* I.11 105a5-7) should be put in this group); second, the definitions of the subject of some science, or kinds of its subject, or the *per se* attributes of its subject (including ‘partial’ definitions, as in al-Fārābī's example of a proper principle on p.60 line 18: “five is an odd number;” presumably, being an odd number is the proximate genus of the number five and its constitutive differentia is missing in the claim “five is an odd number.” With this example, compare al-Fārābī's claim in the logic section of the *Enumeration*: “among the intelligibles there are things about which the intellect cannot err such that a person finds his soul as if it has a natural disposition to their knowledge and the certainty about them; e.g., that the whole is greater than its part, and that three is an odd number” (27-8). I am simplifying here al-Fārābī's views on the principles of sciences. More on the principles of sciences in the *Book of Demonstration*, see p.59-62, which is summarized above in Section 2; also see p.87-90 on the principles of instruction). Especially for the knowledge of the final group of principles, it seems that linguistic competence is helpful and in some cases it might even be sufficient. That said, if such a linguistic

another science or art. From experience alone we obtain the knowledge of the existence of something, not its cause, and such propositions can be used as principles in another art or science (71-2). In short, if all the sciences are considered as one whole scientific discourse, everything other than the self-evident truths and the propositions which come about by experience is syllogistically generated ultimately from these two kinds of absolute principles. If the whole scientific discourse can be viewed as a directed graph with nodes representing each scientific proposition and with arrows connecting two nodes into another node representing the fact that there is a valid syllogism from these two nodes into the third node,¹⁷⁵ and if all the syllogistic arrows are traced backwards, this process would always terminate at these two kinds of absolute principles and only at these.

To summarize our discussion of the subject-matter of metaphysics and how metaphysics relates to other sciences in the *Enumeration* and the *Book of Demonstration*, according to the *Enumeration* account which chiefly builds on *Met.* Γ.1-2 (and maybe also Γ.3), and E.1, metaphysics has three parts: ontology, theology, and the groundwork part, as I called it. I suggested that ontology and theology form a natural unit as self-standing science whereas the groundwork part seems auxiliary to them and can be left out. Indeed, in the *Book of Demonstration* account of the subject-matter of metaphysics, ontology and theology are parts of metaphysics, but the groundwork part, as described in the *Enumeration* account, is completely left out. We also saw that in the *Book of Demonstration* al-Fārābī provides a different account to interpret his claim in T6 (2) of *On the Aims* that the principles of all the particular sciences and their definitions are made clear in metaphysics. A posterior science can demonstrate the *existence* of a principle of the prior science, while the prior science can demonstrate the *cause* of a principle of the posterior science, or *both* the cause and the existence of a principle of the posterior science. These relations also apply to metaphysics and the other sciences. Metaphysics demonstrates the cause, or both the cause and the existence, of some principles in the particular sciences, but some particular sciences also demonstrate the existence of some principles in metaphysics. If we want, we can call the function of metaphysics to demonstrate *why* (or both

competence is understood to consist only in knowing the lexical meanings of the terms, this by itself will presumably not be sufficient for clearly grasping all the principles even in the final group but some sort of dialectical inquiry will also be needed to grasp them clearly.

¹⁷⁵ For the sake of completeness, we can also paint the arrows in three colors with each color indicating whether that arrow stands for a demonstration of the ‘*that*’, or a demonstration of the ‘*why*’, or a demonstration of both.

that and *why*) some principles of the particular sciences hold the groundwork function of metaphysics, but this function is clearly different from the task al-Fārābī accords to what I called the groundwork part in the *Enumeration*, namely the dialectical exposition and defense of the principles of the other sciences. Moreover, if what I tentatively called the groundwork function is merely understood as demonstrating the principles of some other sciences, many sciences other than metaphysics also perform this function, including some particular sciences which demonstrate the existence of some principles in metaphysics.

So, it seems that the groundwork *part* is in a sense peripheral compared to theology and ontology, and it is relatively easily detachable. As can be gathered from *On the Aims* and the *Enumeration* accounts of the subject-matter of metaphysics when they are read against their background in Aristotle *Metaphysics*, and as more explicitly stated in the *Book of Demonstration*, ontology is subservient to theology in that theology achieves the end (*ghāya*) of this science which is the knowledge of the supra-natural principles of all the other beings, and ultimately the single highest principle of all beings *qua* being, namely, God. For this reason, metaphysics is also called the leading art because it studies the ultimate principles of all beings.¹⁷⁶

In the following sections, I will review al-Fārābī's accounts of the subject-matter of metaphysics in his other works. We will see that in all these other accounts al-Fārābī does not mention the groundwork part at all (as understood in the *Enumeration*); also, if we leave aside the account in *KH* discussed in Section 6, in all the remaining accounts discussed below, he seems to present the subject-matter of the theology part of metaphysics as the subject-matter of metaphysics as a whole, i.e., the study of the immaterial substances which are the principles of all the other things. As I pointed out above and will spell out further in the following, this is not completely unjustified, given that ontology serves theology, and it seems that the part I called the groundwork part is auxiliary and relatively easily detachable from the theology and the ontology parts.

¹⁷⁶ *Book of Demonstration*, 70 lines 12-4, as mentioned in Footnote n.171.

Section 4: The subject-matter of metaphysics in introductory accounts where metaphysics is virtually reduced to theology

In a short introduction to philosophy account called *Introductory Treatise*, al-Fārābī discusses, among other things, the five syllogistic arts: philosophy or the demonstrative art, dialectic, sophistic, rhetoric, and poetics. Then he states the aims of the books in the extended Organon (i.e., the Organon as we have it plus the *Rhetoric* and the *Poetics*) and specifies how each book of the Organon provides the common or the specific rules for these syllogistic arts.¹⁷⁷ Next, he introduces an account of the parts of philosophy (or demonstrative art):

T10 *Introductory Treatise*, v.1 58.16-59.5

والفلسفة أربعة أقسام: علم التعاليم والعلم الطبيعي والعلم الإلهي والعلم المدني. والتعاليم أربعة: علم العدد وعلم الهندسة وعلم النجوم وعلم الموسيقى. وعلم الطبيعي يشتمل على النظر في الأجسام وكل ما هو في جسم بالطبع، أي لا بإرادة الإنسان. والعلم الإلهي يشتمل على النظر فيما ليس بجسم ولا هو في جسم. وعلى النظر في الأسباب القصوى لكل ما يشتمل عليه سائر العلوم الآخر¹⁷⁸.

Philosophy has four parts: mathematics, natural science, divine science, and political science [al-‘ilm al-madanī]. Mathematics [has] four [parts]: arithmetic, geometry, astronomy, and music theory [‘ilm al-mūsīqā]. Natural science comprehends the investigation of bodies and everything which is in a body naturally [bi-l-ṭabʿ], i.e., not by the human will. Divine science comprehends the investigation of whatever is not a body nor is in a body, and [the investigation] of the ultimate causes of all the things comprehended by the other sciences.

Even though there are some noticeable differences, this account is ultimately an extremely skimmed version of the accounts of the division of philosophy we find in the introduction to

¹⁷⁷ As Dimitri Gutas points out in his paper “Paul the Persian on the Classification of the Parts of Aristotle’s Philosophy: A Milestone Between Alexandria and Bagdād,” *Der Islam* 60 (1983): 231–67, an Alexandrian Greek representative of the account of the five syllogistic arts and the works in the Organon organized according to them can be found in the Aristotle’s philosophy account prefixed to the *Categories* commentary by Elias (David) at 116.29-7.8: see especially Diagram IVa on p.264 for an overview of the cited account in Elias (David), and Diagram V on p.266 for an overview of the accounts of the five syllogistic arts and the works in the Organon organized according to them in various works by al-Fārābī.

¹⁷⁸ الآخر is printed.

philosophy accounts prefixed to the late antique Alexandrian commentaries on the *Isagoge*.¹⁷⁹ In these accounts, philosophy is first divided into theoretical and practical; theoretical philosophy is further divided into three: natural science, mathematics, and divine science (*theologia* or *theologikē/theologikon*).¹⁸⁰ In al-Fārābī's account, philosophy is not first divided into theoretical and practical but it is directly divided into four: the three subdivisions of theoretical philosophy plus political science by which al-Fārābī means practical philosophy as a whole, as he explains in the passage that follows T10 at 59.5-8. In this passage, al-Fārābī indicates that political science studies real happiness distinguished from what is merely believed to be happiness and things that prevent from the members of a political body (*madīna* = *polis*) from attaining happiness; he adds that this science is also called "human philosophy [*al-falsafa al-insāniyya*]" or "practical [*al-'amaliyya*]" philosophy because it concerns itself with "things that are of the sort to be done [*tu 'mala*] or to be acquired [*tunāla*] by the will [*irāda*]."

This description of practical philosophy bears the mark of the Aristotelian tradition, but it does not follow closely the description of practical philosophy and its parts in the mentioned late antique Greek accounts of division of philosophy.¹⁸¹ By contrast, al-Fārābī's characterization of the three parts of theoretical philosophy closely follows the characterization of the three parts of theoretical philosophy in these late antique Greek accounts, even though al-Fārābī's account does not match them exactly. Ammonius and his followers characterize the three kinds of theoretical philosophy according to three types of beings: some beings are not separated from matter at all, neither in reality (*hupostasis* / *huparxis*) nor in thought (*epinoia*); others are separated from matter in thought but not in reality; the third type comprehends the beings which are separated from matter both in reality as well as in thought. Natural science studies the first type of beings; mathematics studies the second type of beings; and divine science studies the third type.¹⁸² As suggested above in Section 1, this account depends on *Met.* E.1 1025b18-6a23, and in turn, it informs the account of the subject-matters of natural science, mathematics, and metaphysics in

¹⁷⁹ For a concise and useful overview of this narrative in the four extant commentaries of this tradition (Ammonius, Elias, David, Ps-Elias Ps-David), see Westerink, *The Alexandrian Commentators* 344-7, in particular for the division of philosophy, 345, 347.

¹⁸⁰ In David and Ps-Elias Ps-David, this tripartite division of the theoretical part of philosophy is ascribed to Aristotle; Plato is said to divide it into two: natural science and divine science because mathematics precedes theoretical philosophy as propaedeutics (*progumnasma*, *propaideia*) (David: 57.15-25; Ps-Elias Ps-David: 34.4-10).

¹⁸¹ For comparison, check Ammonius: 15.1-16.6, Elias: 31.27-34.25, David: 74.2-76.28, Ps-Elias Ps-David: 43.23-46.13.

¹⁸² Ammonius: 11.22-12.11; Elias: 27.35-28.7; David: 57.22-58.25; Ps-Elias Ps-David: 34.8-27.

On the Aims 35.16-36.9 discussed extensively above. One big difference is that *On the Aims* also mentions the general attributes like being, unity etc. as studied by the ontology part of metaphysics while in *Met.* E.1 passage as well as in the accounts of Ammonius and his followers, only the subject-matter of the theology part proper is mentioned as the subject-matter of this theoretical science, i.e., metaphysics, as a whole. We know that the science called *theologia/theologikē/theologikon* in Ammonius and his followers and *al-‘ilm al-ilāhī* in al-Fārābī’s T10 is metaphysics as a whole because the division of the theoretical philosophy into these three parts is supposed to be exhaustive.

Al-Fārābī does not describe the subject-matter of mathematics in T10, but he mentions four subdivisions of mathematics: arithmetic, geometry, astronomy, and musical theory. Apart from the subdivision of mathematics, al-Fārābī does not mention the subdivisions of the other two theoretical branches of philosophy (sc. metaphysics and natural science) in T10. Both these features are observed also in the Greek accounts: they explicitly say that they are not going to talk about the subdivisions of natural science and metaphysics but only the subdivisions of mathematics, and they mention exactly these four (and, for example, not other potential candidates like optics or mechanics) as the subdivisions of mathematics.¹⁸³

Al-Fārābī’s account of the subject-matter of natural science in T10 is similar to the Greek accounts but not exactly the same. As al-Fārābī puts it in T10, natural science studies “bodies and everything which is in a body naturally [*bi-l-ṭab*’], i.e., not by the human will.” The things which are not separate from matter in reality or in thought, as mentioned in the Greek accounts and in *On the Aims* as discussed above, are corporeal things (i.e., they are bodies or they are attributes only of bodily things, unlike, e.g., unity or actuality, which are attributes of both bodies and non-corporeal things studied in theology); to this extent, the account of the sort of beings that natural science studies in T10 is similar to the corresponding account in the Greek texts. It is also specified in the description of the subject-matter of natural science in T10 that natural science studies bodies and what is in bodies “naturally, i.e., not by the human will;” “not by the human will” is a gloss on “naturally” and is supposed to distinguish the things studied by natural science from those studied by political science. Recall that as summarized above, in the passage that comes right after T10, al-Fārābī states that political science is also called human or practical

¹⁸³ See Ammonius: 13.8-14.26, Elias: 29.4-31.25, David: 60.10-65.9, Ps-Elias Ps-David: 35.28-39.3.

philosophy because it studies “things that are of the sort to be done or to be acquired by the will.” These things are presumably corporeal (i.e., bodies or subsisting in bodies only).¹⁸⁴ So, both natural science and political science study corporeal things. Since in T10, following its Greek predecessors, al-Fārābī presents an account of the parts of philosophy according to the different kinds or ‘modes’ of beings, and since, unlike its Greek predecessors, al-Fārābī presents political science or practical philosophy on an equal footing as natural science, mathematics, and metaphysics, he (or his intermediary source) probably felt the need to explain the difference between the kind or ‘mode’ of being studied by natural science and that studied by political science because both seem to study corporeal things. The difference lies in whether bodies and what belongs in them are considered insofar as they are natural (i.e., have a source of motion and rest in themselves), or they are considered insofar as they are from the acts of the human will.¹⁸⁵

Al-Fārābī’s account of the subject-matter of divine science, i.e., metaphysics in T10 also follows the Greek accounts in that it studies “whatever is not a body nor is in a body, and... the ultimate causes of all the things comprehended by the other sciences.” As I suggested above, since ontology serves theology and the end of this science is achieved in theology, it is understandable to present the subject-matter of metaphysics as a whole as the things studied specifically in its theology part. But we see here another, though related, reason for virtually reducing metaphysics as a whole into its theology part: if the classification of the sciences is understood in terms of the classification of the kinds or ‘modes’ of beings, the theology part deals with a kind of beings, i.e., things which are neither in bodies nor are bodies, distinct from the kinds and ‘modes’ of beings studied in natural science, mathematics, and political science (natural science studies bodies and what is in bodies insofar as they are natural; political science studies bodies and what is in bodies insofar as they are changed by the human will; mathematics studies some attributes of bodies as separated in thought¹⁸⁶). The ontology part studies general attributes which are shared by all

¹⁸⁴ Practical philosophy, and in particular, moral psychology would also study the human intellect, but as the *human* intellect, it would be studied as embodied. It seems that the Active Intellect allows us to grasp the practical principles (e.g., see *MF* Ch. 13 2-3), but practical philosophy would presumably not investigate these principles or how they come about in the human mind, but it would simply assume them as its principles.

¹⁸⁵ Stephen Menn brought to my attention that *Met.* E.1 1025b18-24 seems to be in the background of this contrast between natural science and political science.

¹⁸⁶ This point is not made explicitly in the *Introductory Treatise* passage under consideration, but as we saw, it is in the underlying Greek account, and it is also in al-Fārābī’s *On the Aims*. As I will discuss below in Section 5, according to the *Book of Demonstration*, it seems that arithmetic studies the relevant properties of *everything* (both the corporeal things and the non-corporeal things studied by theology) as separated in thought. This idea seems to be grounded in the fact that, e.g., we cannot talk about the shape or the volume of a non-corporeal thing studied by

kinds or ‘modes’ of beings. So, if the sciences are characterized by a *particular* domain of beings (or their ‘modes’), it would make sense only to mention the subject-matter of the theology part of metaphysics when we characterize metaphysics as a whole along with the other sciences in this way. It seems that this is also what Aristotle does in *Met.* E.1 1025b18-6a23 as discussed above in Section 1. This is not to reject ontology. As I elaborate on what seems to be al-Fārābī’s thinking in Section 6 below, the demonstration of the existence of the ultimate cause (God), the explanation of the essential features of the things studied by theology (God, the separate intellects of the heavenly bodies, and the Active Intellect (*al-‘aql al-fa‘āl*)), and the explanation of the effects of these ultimate causes on other beings from their essential features will require propositions about the general predicates like being and unity, their opposites, kinds, and *per se* attributes.

Another account of the division of philosophy similar to the one in the *Introductory Treatise* can be found in al-Fārābī’s *Risālat al-Tanbīh ‘alā Sabīl al-Sa‘āda* (*Directing Attention to the Way to Happiness*). In the account of the division of philosophy in his work, al-Fārābī first divides philosophy into theoretical philosophy (*al-falsafa al-naẓariyya*) and “practical philosophy, i.e., political philosophy [*al-falsafa al-‘amaliyya wa-l-falsafa al-madaniyya*].” Then he divides theoretical philosophy into three parts: natural science, mathematics, and “metaphysics [*mā ba‘da al-ṭabī‘a*]” (224). As can be seen in T10, in the *Introductory Treatise* al-Fārābī mentions only the subparts of mathematics and does not mention the subparts of natural science or divine science. Similarly, Ammonius and his followers mention the subparts of mathematics, but they do not mention the subparts of natural science or divine science. Also in the *Directing Attention* passage, al-Fārābī mentions the subparts of mathematics, but not the subparts of natural science or metaphysics (224-5).¹⁸⁷ Besides, al-Fārābī says that each one of the three parts of theoretical philosophy studies “a class of beings [*ṣinḡ min aṣnāf al-mawjūdāt*]” but he explicitly says that the specification of these three classes is not needed in that treatise (224-5). As mentioned above, the Greek texts also characterize the three theoretical sciences along with the three classes of beings each of which is studied exactly by one of these three theoretical sciences.

theology (e.g., the separate intellects which are the causes of the heavenly spheres), but we can talk about their number, i.e., that there are nine of them.

¹⁸⁷ That said, unlike the four parts of mathematics mentioned in the *Introductory Treatise* and in the Alexandrian Greek accounts in the background, namely, arithmetic, geometry, astronomy, and music theory, in the *Directing Attention* account, we have arithmetic, geometry, and optics (*‘ilm al-manāẓir*) (225 line 1).

So, the short account of the division of philosophy in the *Introductory Treatise* and an even less informative account in the *Directing Attention* derive from the accounts of the division of philosophy in the introduction to philosophy narratives prefixed to the Alexandrian commentaries on the *Isagoge*; also, in the *Introductory Treatise*, just like in its Greek precursors, metaphysics is called divine science and is identified as a whole with its theology part. There is a brief mention of metaphysics in another short logical work by al-Fārābī called *Fī-Mā Yanbaghī An Yuqaddama Qabla Ta'allum al-Falsafa* (*On What Ought to Precede the Learning of Philosophy*), and the source of this work is another late antique Alexandrian philosophical narrative.¹⁸⁸ The *Introductory Treatise* combines accounts found in different places in the Alexandrian commentaries with apparently original additions (due to al-Fārābī or his intermediary source). *What Ought to Precede* is a much closer descendant of a single narrative in the Alexandrian commentaries, namely the introduction to Aristotle's philosophy narrative prefixed to the Alexandrian commentaries on the *Categories*. This narrative presents answers to ten questions related to Aristotle's philosophy as a whole. Two of these questions are relevant for our purpose: the question which addresses the division of Aristotle's works, and the question which states the end (*ghāya* - *telos*) of Aristotle's philosophy.¹⁸⁹ All the details of how Aristotle's works are to be divided is not relevant for the purpose of this dissertation; I just want to note that in the relevant grouping of the works by Aristotle, al-Fārābī mentions the works that can be grouped under the heading of theoretical philosophy, practical philosophy, and the Organon (although the headings and the boundaries between these three groups are not clearly put in al-Fārābī's account, unlike in its Greek precursors). As expected, the works in theoretical

¹⁸⁸ This treatise very closely follows its Greek model (or models), but I do not see a strong reason to deny its authenticity. As Wisnovsky notes in his article "Yahyā b. 'Adī's Discussion of the Prolegomena" p.200 n.6, Zimmermann questioned the authenticity of this treatise. Zimmermann suggests in the postscript to his study and translation of al-Fārābī's *Commentary* and *Short Treatise on DI* that this treatise is "almost certainly not by al-Fārābī. This is shown by parallels, e.g., to the section on the canonical preliminaries, in authentic works such as *Alfāz* and the *Commentary*. The text does, however, retain its significance as an Arabic representative – quite possibly known to al-Fārābī – of the late Greek *prolegomena* literature" Al-Fārābī and F. W. Zimmermann, *Al-Fārābī's Commentary and Short Treatise on Aristotle's De Interpretatione: Translated with an Introduction and Notes*, trans. F. W. Zimmermann (London: Oxford University Press, 1981), 258-9. However, as Wisnovsky points out in the same footnote, in the Greek precursors, we observe "internal variations in wording and order within an individual author's text," so we should not be surprised by internal variations "within an individual author's corpus." In any case, if al-Fārābī was familiar with this text and accepted its claims in some sense, that would be good enough for my purpose here. Even if we go further and completely ignore what I say about this treatise, my overall account would not miss much.

¹⁸⁹ For a concise and useful overview of this narrative in all the extant Greek commentaries of this tradition (Ammonius, Philoponus, Simplicius, Olympiodorus, and Elias (David)), see Westerink, *The Alexandrian Commentators* 342-3.

philosophy are put into three groups: “in some of these [works] one learns about divine matters [*umūr ilāhiyya*], in others, one learns about natural matters [*umūr ṭabī‘iyya*], and in others one learns about mathematical matters [*umūr ta‘līmīyya*]” (50.20-22). In the following passage, al-Fārābī briefly describes the works in natural philosophy and mathematics ascribed to Aristotle, but he does not say more about the work or works in which one learns about divine matters. It seems that the *umūr ilāhiyya* refer specifically to the things separated from matter studied by the theology part of metaphysics.¹⁹⁰ Recall that I pointed out that al-Fārābī presents “the comprehension [*wuqū‘ alā*] of the ultimate causes [*quṣwā asbāb*] of all beings” as the end (*ghāya*) of the whole universal science, i.e., metaphysics in the *Book of Demonstration* and this idea seems to justify the subordination of the ontology part of metaphysics to its theology part. In *What Ought to Precede*, we have a stronger version of this idea: understanding of the ultimate causes of beings is not only the end of the science of metaphysics; it is the end of philosophy as a whole:

T11 *What Ought to Precede*, 53.13-6

وأما الغاية التي يقصد إليها في تعلم الفلسفة فهي معرفة الخالق تعالى وأنه واحد غير متحرك وأنه العلة الفاعلة لجميع الأشياء وأنه المرتب لهذا العالم بجوده وحكمته وعدله، وأما الأعمال التي يعملها الفيلسوف فهي التشبه بالخالق بمقدار طاقة الإنسان

The end which is aimed at in the learning of philosophy is the knowledge [*ma‘rifa*] of the Creator [*al-khāliq*], may he be exalted, and that he is one, unmoved, and that he is the efficient cause of everything, and that he puts this world into order by his generosity, wisdom, and justice. The activities [*a‘māl*] that the philosopher performs are the imitation [*tashabbuh*] of the Creator to the extent that a human being is capable of.

¹⁹⁰ Similarly, Ammonius says that Aristotle’s theoretical works are divided into the theological (*theologikon*), the mathematical (*mathēmatikon*), and the natural philosophical (*phusiologikon*) (5.4-5). He does not say more about the theological except for saying further down that it is the last in the order of study (6.4-8). Simplicius is also brief: “of the theoretical [accounts] [*ta theōrētika*], some are theological [*theologika*], e.g., the *Metaphysics* [*hē Meta ta phusika*]” (4.23-4). Philoponus has a bit more to say. Likewise, he says “the theoretical [accounts] are divided into the natural philosophical ones, the mathematical ones, and the theological ones; the theological ones are those [accounts] which are placed by him after the study of nature [*meta tēn phusikēn pragmateian*], [and these accounts] are called *Metaphysics* [*Meta ta phusika*] by him in this way; for the teaching of all the things that are above nature is proper to theology [*theologias*]” (4.35-5.3). Olympiodorus says more or less the same as Simplicius (7.30-1, 34). Finally, Elias (David) has also more or less the same: he first divides the theoretical accounts into three, then he says that Aristotle’s theological accounts “e.g., [the accounts in] the *Metaphysics* [*ta Meta ta phusika*], are inquiries about principles” (115.18-9, 116.12-3). In all these, metaphysics is identified with theology as in al-Fārābī’s account.

As we saw in the description of the subject-matter of the theology part of metaphysics in *On the Aims* and the *Enumeration of the Sciences*, the knowledge of the Creator, his qualities, and the order by which he is the cause of other things is discussed by the theology part. There are some interesting differences between the accounts in *On the Aims* and the *Enumeration*, and this account of what philosophy aims ultimately to know about God: in the present passage, God is said to be the efficient cause of everything. Also, this passage specifies God's three attributes generosity, wisdom, and justice, and apparently the philosopher imitates God's generosity, wisdom, and justice in his activities as much as he can.¹⁹¹

¹⁹¹ The late antique Greek commentators also answer the question about the end (*telos*) (and for some also the usefulness (*chrēsimon*)) of Aristotle's philosophy similarly (Ammonius: 6.9-16, Simplicius: 6.6-15, Philoponus: 5.34-6.2, Olympiodorus: 9.14-30, Elias (David): 119.26-121.4). All of them mention that the end of philosophy is to know the ultimate principle of everything, i.e., God, and then they mention the knowledge of some attributes of this ultimate principle; some of them also bring up additional issues. Of the attributes of the ultimate principle of everything, Ammonius mentions that it is incorporeal, without parts (*amerēs*), cannot be comprehended (*aperilēptos*), cannot be bounded (*aperioristos*), has infinite power (*apeirodunamos*), and is the goodness itself (*autoagathotēs*); after listing these attributes, Ammonius briefly explains that calling the first principle the goodness itself is different from calling it merely good (a body which participates in goodness (*agathotēs*) is good but goodness "is like a substance and a subsistence [*huparxis*]" (6.15-6)). Philoponus specifies that the common principle of everything is their creative or artificer cause (*dēmiourgos aitia*); he adds that it is the same always, one, incorporeal and that everything proceeds (*paragesthai*) from it. Of the attributes of the single ultimate principle of everything, Olympiodorus mentions more or less the same list of attributes; the only difference is that Olympiodorus does not mention that it is without parts; in addition to Ammonius, he mentions that it is an object of desire (*orektikē*) for all natural things. Like Ammonius, Olympiodorus also explains the difference between saying that something is good and saying that it is goodness. Finally, Olympiodorus quotes *Iliad* II 204-5 that Aristotle quotes at the very end of *Met. Λ* ("the rule of many is not good; let there be one leader / one king") and Olympiodorus adds that "Aristotle himself said this in the *Metaphysics*, theologizing:" then Olympiodorus apparently quotes from Aristotle an argument that reality is well ordered and there must be something that puts it in its good order (9.24-8) (Sebastian Gertz, the translator of this work in the Ancient Commentators on Aristotle series, suggests on p.227 n.49 that here Olympiodorus summarizes and interprets "in syllogistic from" *Met. Λ*.10 1075a11-25, but it looks rather like a gloss on Aristotle's brief claim at the end of *Met. Λ*.10 with the mentioned quote from the *Iliad*, at 1076a3-4, inspired by Aristotle's earlier claims in *Met. Λ*.10). Olympiodorus concludes by saying that this is the first principle whose knowledge is the end of Aristotle's philosophy. Elias (David) also cites part of *Iliad* II 204-5 in connection with the claim that the end of Aristotle's philosophy is the knowledge of the single principle of everything, and then he asserts that Aristotle presents two arguments in the *Metaphysics* for the claim that there is only one principle of everything ("that there is one principle of everything Aristotle shows in the *Metaphysics*, theologizing thus:" 120.1-2; the arguments are presented at lines 2-15); even though these arguments use some ideas from *Met. Λ*, they do not seem to be mere summaries or paraphrases of some passages in the *Metaphysics*. (The editor of the Greek text of Elias (David)'s *Categories* commentary in the CAG series used here, Adolf Busse, points out in the apparatus that the Aristotelian Rose fragment 17 (a scholium to Proverbia Salomonis; in Valentin Rose, ed., *Aristotelis Qui Ferebantur Librorum Fragmenta* (Leipzig: Teubner, 1886)) is from this passage in Elias (David) (more specifically, Rose fragment 17 corresponds to Elias (David) 120.2-7). I originally overlooked this note by Busse, but I noticed it after Kosta Gligorijevic brought to my attention that this apparent quote from Aristotle in Elias (David) contains Rose fragment 17 which Rose considers under *De Philosophia*. I would also like to thank Kosta Gligorijevic for the further information about this fragment that he shared with me.) After this apparent quote from Aristotle at lines 2-15, Elias (David) asserts that Aristotle means (*bouletai*) this principle to be productive (*poiētikē*) of all the heavenly bodies and the sublunar things and this is so not by temporal priority but in the way that the sun is prior to its light as its cause (lines 15-9). Elias (David) wraps up his discussion about the end of Aristotle's philosophy by addressing two questions posed to Aristotle's account: first, whether he thinks that there are many principles (one for each

heavenly sphere); second, why he posits the first principle to be *nous* and not the good like Plato (120.19-121.4). Simplicius' account of the end of Aristotle's philosophy is somewhat different. Simplicius mentions two goals of Aristotle's philosophy: "concerning the character, perfection [*teleiōsis*] through virtues, concerning knowledge, the ascent [*anadromē*] to the one principle of everything" and both has the goal of complete happiness. About the knowledge of the single principle of everything, he also quotes the *Iliad* line. Finally, Simplicius says that Aristotle indicates in the last part of the *Nicomachean Ethics* that someone with such happiness should be called a god (as Michael Chase, the translator of this work in the Ancient Commentators on Aristotle series, points out on p.102 n.84, the reference is to *EN* X.7).

Of the attributes of the first principle or God that al-Fārābī mentions in the passage under consideration, the Greek commentators mention that it is one; arguably, they also imply that it is unmoved. Philoponus says that it is a *dēmiourgos* cause and Elias (David) says that it is a *poiētikē* principle. This seems to be what al-Fārābī means when he says that it is the efficient cause of everything. This apparently goes back to Ammonius. Simplicius says in his commentary on *DC* (271.18–21) and his commentary on the *Phys.* (1363.8–12) that "our teacher Ammonius" wrote a book showing that for Aristotle God is not only the final cause of the world but also its productive cause (*poiētikon aition*) (these passages came to my attention first through p.51 n.10 of Stephen Menn, "Self-Motion and Reflection: Hermias and Proclus on the Harmony of Plato and Aristotle on the Soul," in *Neoplatonism and the Philosophy of Nature* (Oxford: Oxford University Press, 2012), 44–67). The *Kitāb al-Jam' Bayna Ra'yay al-Ḥakīmāyn* (*The Book of the Agreement Between Two Philosophers*) attributed to al-Fārābī speaks of such a book by Ammonius too: it is said that Ammonius wrote an "independent treatise [*maqāla mufrada*]" on the views of Aristotle and Plato "affirming the Artificer [*ṣāni*]", which we did not need to bring up here due to its popularity" (*Kitāb al-Jam' Bayna Ra'yay al-Ḥakīmāyn* (*The Book of the Agreement Between Two Philosophers*), ed. Albīr Naṣrī Nādir (Beirut: Dar El-Machreq Publishers, 1968), 102) (Let me use this as an opportunity to state that in this dissertation I do not take a side on the debate about the correctness of the attribution of this work to al-Fārābī. To be safe, I do not discuss this work in this dissertation as a work by al-Fārābī. Even if this work is by him, I do not think there is anything in this work that would force a radical change in the interpretive views defended in this dissertation). This work by Ammonius is cited to support the author's claim that both Aristotle and Plato think that the world has an "Artificer which is its efficient cause [*illatuhu al-fā'ila*]" (100). In agreement with this, the *Fihrist* also mentions among Ammonius' works a book which explains "the views [*madhāhib*] of Aristotle on the Artificer" (Flügel 253 = Sayyid v.2 176). I translated *al-ṣāni* as the Artificer assuming that it translates the *dēmiourgos* (*aitia*), but it could also be translating the *poiētikon* (*aition*). I briefly discuss below the way in which God is a cause of being for other things in al-Fārābī's metaphysical accounts.

Of the remaining three attributes of God, wisdom, generosity, and justice, mentioned by al-Fārābī in the passage under consideration, only generosity (or goodness) is mentioned by the Greek commentators in the corresponding passages reviewed above. Also, in the passage under consideration al-Fārābī mentions that the philosopher imitates God in his activities as much as he can; this is not mentioned by the Greek commentators in the passages reviewed above. The closest we have is Simplicius' claim that the end of Aristotle's philosophy is both theoretical and practical perfection with the common goal of complete happiness and as Aristotle says in *EN* X.7, the person who achieves ultimate happiness should be called a god. However, we find almost exactly what al-Fārābī says about God's wisdom, generosity, and justice and that the philosopher imitates God as much as possible in another place in the Alexandrian late antique Greek commentaries. Namely, one of the six definitions of philosophy discussed in the introduction to philosophy prefixed to the *Isagoge* commentaries is that philosophy is the assimilation to God as much as possible for humans (Ammonius: 3.7-4.14; Elias: 16.9-17.35; David: 34.14-39.13; Ps-Elias Ps-David 21.13-24.15; this definition of philosophy ultimately derives from Plato's *Theaetetus* 176a-b: διὸ καὶ περᾶσθαι χρὴ ἐνθὲνδε ἐκεῖσε φεύγειν ὅτι τάχιστα. φυγὴ δὲ ὁμοίωσις θεῷ κατὰ τὸ δυνατόν; ὁμοίωσις δὲ δίκαιον καὶ ὅσιον μετὰ φρονήσεως γενέσθαι ("for this reason we should also try to escape from here to over there as quickly as possible; [this] escape is an assimilation to god as much as possible, with assimilation [meaning] becoming just, pious, and someone with practical wisdom")). For Ammonius, God's qualities that the philosopher strives to imitate as much as he can are knowledge (*gnōsis*) and providence (*pronoia*). For Elias, David, and Ps-Elias Ps-David, the philosopher imitates God with respect to God's goodness (*to agathon*), power (*to dunaton*), and knowledge (*to gnōstikon*). Al-Fārābī's triad of generosity, wisdom, and justice seem to have a close connection to the triad goodness, knowledge, power we find in the late antique Greek commentaries. More on this latter triad and how Yahya applied it to trinity, see Elvira Wakelnig, "What Does Aristotle Have to Do with the Christian Arabic Trinity? The Triad 'Generosity-Wisdom-Power' in the Alexandrian Prolegomena and Yahyā Ibn 'Adī," *Le Muséon* 130, no. 3–4 (2017): 445–77; in particular, see 460-3 for this passage from al-Fārābī and its potential sources.

It is not my purpose here to present an exhaustive discussion of how al-Fārābī's descriptions of the subject-matter of the theology part of metaphysics in different works compare with his actual accounts in theology in *MF* and *SM*, but as I briefly discuss some prominent features of his accounts in theology in *MF* and *SM* below, al-Fārābī seems to imply without explicitly saying that God is the efficient cause (and the final cause) of being for the other things. Of the attributes of God, al-Fārābī's accounts in *MF* and *SM* follow by and large the list of God's attributes mentioned in the description of the theology part in the *Enumeration*, but the *Enumeration* account also mentions that in the theology part we show that the first cause has the other attributes that are traditionally ascribed to God without specifying what these attributes are; *MF* defends primarily in Ch.1 and Ch.2 that the first has several attributes that are not explicitly counted in the *Enumeration* account but are traditionally ascribed to God; among these attributes, we find the three attributes mentioned in T11 (sc. generosity, wisdom, and justice) too.¹⁹²

I want to emphasize that according to T11, we achieve in the theology part of metaphysics not only the end of metaphysics but also the end of philosophy as a whole. So, philosophy as a whole culminates in metaphysics and in particular in the theology part of metaphysics. This also seems to confirm the subordination of the ontology part of metaphysics to its theology part.

Section 5: Metaphysics as a demonstrative science in relation to other sciences in the *Attainment* and the *Philosophy of Aristotle* and the outline of how al-Fārābī executes the theology part in *MF*, *SM*, and *On the Intellect*

That philosophy culminates in metaphysics is an idea we find in al-Fārābī's *Kitāb Taḥṣīl al-Sa'āda (The Attainment of Happiness)* and *Falsafat Aristūṭālīs (Philosophy of Aristotle)*.¹⁹³ In the

¹⁹² God's generosity (*jūd*) and justice (*'adl*): *MF* Ch.2 2; his wisdom (*ḥikma*): *MF* Ch.1 8.

¹⁹³ I also used the translations of both texts in *Alfarabi's Philosophy of Plato and Aristotle*, trans. Muhsin Mahdi (New York, NY: The Free Press of Glencoe, 1962). A short note on the Arabic text and the English translation of *The Attainment of Happiness*: Mahdi's translation is based on his improvements on the Arabic text found in a "printer's copy" published in Hyderabad in 1345 AH. As he indicates on pp.151-2, he collates the Hyderabad text with two mss. and a Hebrew paraphrase contained in Falaquera's *Reshit Hokhmah*. Mahdi concludes that the Hyderabad text and the two mss. he consults "form a close family" but the Arabic text that served as the source of this Hebrew paraphrase "must have belonged to a different family representing a more complete text." Then, on p.152-6, Mahdi lists his emendations to the Hyderabad text and cites the sources of the variant readings he uses. In his critical edition of the Arabic text, Āl Yāsīn consults a number of mss. including the two mss. consulted by Mahdi as well as the text printed in Hyderabad, and even though he occasionally takes the readings in Falaquera into consideration through Mahdi (see p.140 n.4), he does not consider (at least does not record) all the improvements to the Arabic text Mahdi proposes mainly based on the readings in Falaquera (for example, p.123 lines 8-10 in the critical edition

Attainment, al-Fārābī charts out an order to study the parts of philosophy and his *Philosophy of Aristotle* mostly follows this order embedding the works attributed to Aristotle that al-Fārābī was probably familiar with in this order. Al-Fārābī usually names these works attributed to Aristotle but sometimes he merely describes their content without naming them explicitly.¹⁹⁴ Such an order of study should not be taken in a narrowly pedagogical sense of arranging topics in consideration of the beliefs the student is likely to have at the initial state of their education (some of these beliefs might be shaped by the particular societies they are raised in). Rather, this order is meant primarily to reveal the epistemic structure of the parts of philosophy (and the topics discussed in the Aristotelian works dealing with those parts) so that one would see in what respect a part depends on or supports another. In the *Attainment*, the sciences (‘*ulūm*) which are

reads: ...فهو مبادئ الوجود لما يشتمل عليه ذلك الجنس مما يُطلب معرفته؛ كانت مبادئ التعليم فيه هي بأعيانها مبادئ الوجود. The asyndeton is awkward. Also, if the train of thought in the surrounding passage is taken into consideration, there seems to be a missing clause before this كانت. Indeed, based on the Hebrew paraphrase in Falaquera, Mahdi proposes to add وإذا كانت المعلومات الأول في جنس من الأجناس هي بأعيانها أسباب ما يشتمل عليه ذلك الجنس كانت; this addition both solves the mentioned awkwardness and more importantly, the passage makes much better sense with this addition). I will note the improvements to Āl Yāsīn’s critical edition based on Mahdi that are important for my discussion of the *Attainment* below (one of which is the example mentioned in the previous sentence). It is not always easy to cross-check passages in Mahdi and in Āl Yāsīn’s critical edition because Mahdi refers only to the page and line numbers in the Hyderabad text. To make such a comparison easier, I will reference the passages in the *Attainment* indicating the paragraph numbers both in Mahdi’s English translation and Āl Yāsīn’s critical edition. For example, E5, A4 means that the passage I refer to is in paragraph 5 in Mahdi’s translation and in paragraph 4 in Āl Yāsīn’s critical edition (if needed, I will also indicate the page and line numbers in the critical edition). Mahdi’s translation of the *Philosophy of Aristotle* is based on his edition of this text cited above. Mahdi uses the same part and section divisions in his translation and his edition. Also, the page and line numbers of the Arabic text are given in the margins of his translation. So, when I cite a passage from the *Philosophy of Aristotle*, I will usually cite only the section numbers. When I cite the page and line numbers of a passage in addition, I will only cite its page and line numbers in the Arabic text. The reader can easily find Mahdi’s translation of this passage following the page and line numbers of the Arabic text provided in the margins of his translation.

¹⁹⁴ I say “attributed” purposefully because al-Fārābī seems to refer to the Ps-Aristotelian *On Plants* in the *Philosophy of Aristotle* 69-71. Al-Fārābī says in the *Philosophy of Aristotle* that after the elements and the homogenous bodies, Aristotle moves on to study the natural heterogenous bodies (*al-ajsām al-ṭabī‘iyya al-mukhtalifat al-ajzā’*) and the living beings that have these natural heterogenous bodies as their parts, and the plants are studied before the animals. The study of the plants al-Fārābī describes in the *Philosophy of Aristotle* 69-71 should be a reference to the Ps-Aristotelian *On Plants*. Al-Fārābī does not always name the works attributed to Aristotle whose contents he describes. *On Plants* is an example. Another prominent example is the *Nicomachean Ethics*. We have a surviving Arabic translation of a version of the *Nicomachean Ethics* (*The Arabic Version of the Nicomachean Ethics*, ed. Anna A. Akasoy and Alexander Fidora, trans. Douglas Morton Dunlop (Leiden: Brill, 2005)) and we have excerpts of al-Fārābī’s otherwise lost commentary on the *Nicomachean Ethics* (Chaim Meir Neria, “Al-Fārābī’s Lost Commentary on the Ethics: New Textual Evidence,” *Arabic Sciences and Philosophy* 23 (2013): 69–99), but in the *Philosophy of Aristotle*, al-Fārābī does not name any ethical work by Aristotle, even though he generally describes “political” or “human” science, and this science would clearly comprehend Aristotle’s ethical works. In fact, almost whole Aristotelian corpus as we have it, including a spurious work like *On Plants* are explicitly named or clearly identifiable in the *Philosophy of Aristotle* with the glaring exception of the works in practical philosophy. One reason for this unusual ambiguity about Aristotle’s works in practical philosophy seems to be that al-Fārābī did not have access to Aristotle’s *Politics*, and he meant to supplant Aristotle’s *Politics* with apparently a reworking of a Greek epitome of Plato’s *Laws* (*Alfarabius Compendium Legum Platonis* (*Al-Fārābī’s Epitome of Plato’s Laws*), ed. and trans. Francesco Gabrieli (London: Warburg Institute, 1952)).

the theoretical virtues (*al-faḍā'il al-naẓariyya*) are the mathematical sciences, natural science, metaphysics, and finally human science (*al-'ilm al-insānī*), i.e., political science (*al-'ilm al-madani*). These sciences presume the art of logic which teaches us the methods to attain the truth and to avoid being mistaken about what appears to be true but is not. The way from the mathematical sciences to natural science and from it to metaphysics is the 'way-up' to the ultimate principle of beings; then as a 'way-down' we proceed from the ultimate principles of beings studied in metaphysics to other beings caused by them. Since my concern here is to clarify al-Fārābī's account of the subject-matter of metaphysics, and as will become clearer below, it presumes what he says about the subject-matters of mathematics and natural science, I will focus in what follows on al-Fārābī's accounts of the subject-matters of mathematics, natural science, and metaphysics, and will not discuss in detail his account of the subject-matter of human or political science. To put it briefly here, although some aspects of how human or political science enters into this picture are not entirely clear, it seems that this science belongs rather to the 'way-down': this science specifies what is need for each human to achieve the amount of human perfection that he can achieve, which is the theoretical perfection (*al-kamāl al-naẓarī*), i.e., the knowledge of the sciences or theoretical virtues mentioned above. Such specifications undertaken in this science presume a clear understanding of what human perfection consists in (which presumes, in particular, a clear understanding of the Active Intellect which is under God but is above nature and is studied in metaphysics) as well as the knowledge of the natural world and what sort of political organization is conducive towards or detracts from the achievement of the perfection each person is capable of; these would be provided fully in the 'way-down' causal explanation of everything else in the world from the ultimate first principle.¹⁹⁵ Al-Fārābī discusses these sciences or the theoretical virtues (including logic) in E2-21, A1-20. After this, he discusses the deliberative virtues (*al-faḍā'il al-fikriyya*), the moral virtues (*al-faḍā'il al-khulqiyya*), the practical arts (*al-ṣinā'āt al-'amaliyya*), and the features of an ideal political organization and its leader, which are needed to implement the human perfection grasped by the sciences, but these issues fall outside of the purview of the present discussion.

¹⁹⁵ See, *Attainment* E17-8, A15-6, E20, A19-20; *Philosophy of Aristotle* 91-99.

After a long introduction in the *Philosophy of Aristotle* arguing for our need for the natural and the human sciences listed above to know what human perfection is and how one can achieve it (1-3), al-Fārābī presents the topics covered in the individual works in the Aristotelian corpus that he was probably familiar with according to the order of the theoretical sciences presented in the *Attainment* preceded by logic, with the big difference that the mathematical sciences are skipped (so we have logic, natural science, human science, and metaphysics). The reason seems to be that al-Fārābī was not aware of the contents of the works or the parts of the works attributed to Aristotle that can be considered mathematical works.¹⁹⁶

¹⁹⁶ I mean, for example, the *Mechanics* (which is widely considered to be spurious) or Book XV of the *Problems* (I owe this latter reference to Stephen Menn). To be clear, al-Fārābī talks about the ‘applied’ mathematical sciences of mechanics (‘ilm al-ḥiyāl), optics (‘ilm al-manāẓir), and others in various works, including the *Attainment*. What I suggest is that al-Fārābī does not seem to be familiar with the contents of the works dealing with these sciences attributed to Aristotle, e.g., the work that came down to us under the title of *Mechanics* or Book XV of the work in the Aristotelian corpus we call the *Problems*. In the classification of Aristotle’s works in the introduction to Aristotle’s philosophy accounts prefixed to the late antique Greek commentaries on the *Categories*, various mathematical works are attributed to Aristotle, and al-Fārābī follows them in his *On What Ought to Precede*. All the Greek commentators assert that Aristotle’s works in the theoretical sciences are divided into three groups: the mathematical, the natural, and the theological; as we saw above, al-Fārābī also follows this classification. Ammonius and Philoponus do not go on to specify the names of Aristotle’s supposed mathematical works. Simplicius says, somewhat vaguely, that Aristotle’s “mathematical [accounts] are like the geometrical and mechanical books [γεωμετρικά... καὶ μηχανικά βιβλία] written by him” (4.25-6). Olympiodorus is more precise: Aristotle’s “mathematical [accounts] are like the *Mechanical* and the *Optical Problems* [τα μηχανικά καὶ ὀπτικά προβλήματα]” (7.33). Likewise, Elias (David) mentions as examples of Aristotle’s mathematical accounts “the books *Optics* and *Mechanics* written by him [τα ὀπτικά καὶ μηχανικά αὐτοῦ(ι) βιβλία γεγραμμένα]” (116.11-2). In *On What Ought to Precede*, al-Fārābī mentions among the mathematical books of Aristotle “his book on optics [fī al-manāẓir], his book on the lines [fī al-khuṭūṭ] [Ps-Aristotelian *On Indivisible Lines*?], and his book on mechanics [fī al-ḥiyāl]” (51.17-8). Ptolemy al-Gharīb’s list of Aristotle’s works mentions “n.11 his work [kitāb] in which he discusses whether there are indivisible lines, in three books [maqālāt]” (Hein p.420 = Rashed p.13 line 10) and “n.22 his work [kitāb] called ‘*Mechanical Problems*’, in two books [maqālatān]” (Hein p.422 = Rashed p.14 line 9) (Ptolemy al-Gharīb, *Épître à Gallus sur la vie, le testament et les écrits d’Aristote*, ed. and trans. Marwan Rashed (Paris: Les Belles Lettres, 2021)), but as far as I can see Ptolemy al-Gharīb does not attribute a *ta ὀπτικά* or *ta ὀπτικά προβλήματα* to Aristotle. That said, Diogenes Laertius’ list of Aristotle’s works contains a greater number of seemingly mathematical works (the whole list is in Book V Chapter 1 (Aristotle), lines 257-411 in Diogenes Laertius, *Lives of Eminent Philosophers: Edited with Introduction*, ed. Tiziano Dorandi (New York, NY: Cambridge University Press, 2013)). Paul Moraux considers the works which are at lines 366-371 to be the mathematical works in the list (Paul Moraux, *Les Listes Anciennes des Ouvrages d’Aristote* (Louvain: Édition Universitaires de Louvain, 1951), 111-114). These are: Περὶ μονάδος α’, Σημεῖα χειμώνων α’, Ἀστρονομικὸν α’, Ὀπτικὸν α’, Περὶ κινήσεως α’, and Περὶ μουσικῆς α’. Of these, Ἀστρονομικὸν α’, Ὀπτικὸν α’, and Περὶ μουσικῆς α’ could be on the mentioned ‘applied’ mathematical sciences of astronomy, optics, and music theory, respectively. Perhaps Περὶ κινήσεως α’ presented something like the kinetic theory whose traces we find in *Phys.* (mentioned in several places in *Phys.* VI and VII but discussed most extensively in VII.5; also compare IV.8 215a24ff for the relation between the density of the medium in which something moves and its speed). Περὶ μονάδος α’ sounds like a work in the *philosophy of mathematics*, but I find it hard to imagine what sort of ‘pure’ or ‘applied’ ancient mathematical work with this title would look like (like, e.g., Euclid’s *Elements* or his *Optics*). The mention of Σημεῖα χειμώνων α’ among these works is strange; Moraux tries to explain why it was considered a mathematical work by saying that nautical astronomy that Aristotle mentions at *APo* I.13 78b39-9a1 contained not only a part of ‘applied’ mathematics but also some meteorological considerations like those apparently contained in Σημεῖα χειμώνων α’ (*Les Listes*, 113), but this explanation seems a bit stretched: it seems to me that nautical astronomy mentioned in that *APo* passage has to do with the use of the positions of the

In the following discussion of the *Attainment* and the *Philosophy of Aristotle*, I will mainly follow the account in the *Attainment*; as I proceed, I will bring in the clearer explanations in the *Philosophy of Aristotle* account and point out the interesting differences between the two in addition to the big difference already mentioned.

After a brief discussion of logic which is a prerequisite for the attainment of certain knowledge that is sought in the theoretical sciences, al-Fārābī presents an overview of the epistemic structure of an individual science and of the ordered relations between individual sciences in paragraphs E5-9, A4-8 of the *Attainment*. Generally speaking, this is a simplified version of the discussion of these topics in the *Book of Demonstration*, but it is worth going through it because it differs from the discussions in the *Book of Demonstration* in some interesting ways. Recall that in the *Book of Demonstration*, al-Fārābī distinguishes three elements of a science: a genus which is the underlying subject of the science, the principles which are assumed and not demonstrated in this science, and the problems which are demonstrated from the principles. The problems have as their subjects and predicates the underlying genus, or the species of this genus, or its *per se* attributes, or some further combination of ‘being a species of’ and ‘being a *per se* attribute of’ operations applied to the underlying genus. The proper principles of this science also have as their subjects or predicates the underlying genus, or its species, or its *per se* attributes, or (parts of) their definitions. We have a simpler picture of the elements of a science in the *Attainment*. Accordingly, a science is characterized by its underlying genus, and we seek in this science certain knowledge of its species.

stars for navigational purposes exclusively; if this art also included the study of some meteorological phenomena, I do not understand why it would be called some sort of astronomy (*astrologia*), i.e., the accounts (*logoi*) on the stars (*astra*). Even if nautical astronomy contained an ‘applied’ mathematical part and a meteorological part, as Moraux suggests, and if Σημεῖα χειμώνων α’ fell under its meteorological part, I do not see why this meteorological part supposedly studied in Σημεῖα χειμώνων α’ would by itself be considered a mathematical work. In any case, besides these six works, further down in the list of Aristotle’s works in Diogenes, Μηχανικὸν α’ is also mentioned (line 378) (Moraux argues on *Les Listes* 120 that this work is probably the Ps-Aristotelian *Mechanics* that came down to us under that name and Moraux suggests that this work is listed among the “problems or hypomnematic works” because this work deals with problems concerning devices like levers). In Diogenes’ list of Aristotle’s works, there is also a work called “Μαθηματικὸν α’” (line 319), but this is presumably not a mathematical work but a work on mathematics. Even if all these works are authentic, their titles are ambiguous as to how much of mathematical accounts, strictly speaking, they contained. In Diogenes’ list, Ps-Aristotelian *On the Indivisible Lines* seems to be attributed to Theophrastus: among Theophrastus’ works, “Περὶ τῶν ἀτόμων γραμμῶν α’” is mentioned (Book V Chapter 2 (Theophrastus) line 91). In any case, none of these mathematical works attributed to Aristotle are mentioned in al-Fārābī’s *Philosophy of Aristotle*. So even if al-Fārābī thought that Aristotle wrote some mathematical works as indicated in the *On What Ought to Precede* account, none of such works (or their reliable summaries) was available to him for him to include the description of its topic in his *Philosophy of Aristotle*.

As we also saw above, in the *Book of Demonstration*, we first seek the knowledge of the existence ('that') of something, and after attaining this knowledge, we seek the knowledge of its cause ('why'), or we seek to attain the knowledge of both together. Recall that al-Fārābī makes a distinction between priority in knowledge and priority in being in the *Book of Demonstration*. Broadly speaking, if we get to know B from the knowledge of A, A is prior in knowledge to B. On the other hand, if A is the cause of B (explaining why it holds in respect of one of the four traditional Aristotelian causes), A is prior in being to B. And recall that these two senses of priority are applied to the principles of sciences too. We have similar ideas in the *Attainment* too. If we get to know B from our knowledge of A, A is the (or a) principle of instruction (*mabda' al-ta'lim*) for B. Also, if A is the cause of B (explaining why it holds in respect of one of the four traditional Aristotelian causes), A is the (or a) principle of being (*mabda' al-wujūd*) for B.¹⁹⁷ We can also talk about the principles of instruction of a science or the principles of being of a science. If A is among the first things known in a science such that starting from their knowledge, we proceed to attain the complete knowledge of everything whose knowledge is sought in this science (i.e., the knowledge of the 'that' and the 'why' of the species under the underlying genus according to this account in the *Attainment*), A is among the principles of instruction for this science. Likewise, if A is the ultimate cause, or among the ultimate causes of all the things whose knowledge is sought in this sense, A is the (or a) principle of being for this science. So, in this sense, the principles of instruction for a science, as they are called in the *Attainment*, are the principles of science, as they are called in the *Book of Demonstration*, because in both cases, we talk about the things that are assumed without a demonstration in that science but everything else is demonstrated ultimately from them.

According to the *Attainment* account, some principles of instruction are also principles of being, but they do not need to coincide. Assuming that we get the knowledge of B from the knowledge of A, if A is the cause of B, A is both the principle of being and the principle of instruction for B, but if A is not the cause of B, A is a principle of instruction for B, but is not a principle of being for B. Recall that in the *Book of Demonstration*, al-Fārābī says that we can have a demonstration

¹⁹⁷ I suggested above that when al-Fārābī talks about A's being prior in knowledge to B or A's being prior in being to B, he seems to keep the extensions of such As and Bs intentionally vague (propositions, or states of affairs, or entities) to have the flexibility to account for various locutions which are meant to be analyzed using these concepts of priority in knowledge and priority in being. It appears that when al-Fārābī talks about the principles of instruction and the principles of being, he keeps their extensions similarly vague for a similar reason.

of the existence (or ‘*that*’) only, or a demonstration of the cause (or ‘*why*’) only, or a demonstration of both. A demonstration of the existence only proceeds from what is prior in knowledge, and such demonstrations are called *dalīls*. As explained above, *some* (though not all) of such demonstrations can be transposed into a demonstration of the cause too. For example, the phases of the moon can be used to demonstrate *that* the moon has a spherical shape, but not *why* the moon has a spherical shape. Rather, we can use the spherical shape of the moon to demonstrate both *that* and *why* the moon has those phases. We also saw above that according to the *Book of Demonstration*, a demonstration starting from a cause, i.e., when what is prior in being is also prior in knowledge, is a demonstration of the ‘*why*’ or in some cases it is a demonstration of both the ‘*that*’ and the ‘*why*’. As explained above, al-Fārābī seems to suggest that if we demonstrate from the efficient or the material cause, we get only the demonstration of the ‘*why*’, but if we demonstrate from the formal or the final cause, we get the demonstration of both. We have a similar, but simplified view in the *Attainment*. If A is the principle of instruction for B but is not the principle of being for it, from A, we only get the knowledge of the existence of B. On the other hand, if A is also the principle of being for B, we get the knowledge of both the existence and the cause of B. So, in the *Attainment*, we do not see any distinction between the cases where we only get the knowledge of the ‘*why*’ and the cases where we get the knowledge of both. Moreover, I reminded the reader that in the *Book of Demonstration*, in some cases, but not in all cases, if A is used to demonstrate only the existence of B, B can be used in turn to demonstrate the cause of A (e.g., the phases of the moon and the spherical shape of the moon). In the *Attainment*, al-Fārābī seems to be considering only these cases. So he considers only the cases where A is the principle of instruction for B but is not a principle of being for it but B is the principle of being for A, so we can gain the knowledge of the existence of B from A, and then using our knowledge of B, we can gain the knowledge of the cause and the existence of A (since we used A as a principle of knowledge, we must already know the existence of A; so the inference of the existence of A from B is unnecessary, but the inference of the knowledge of the cause of A from B adds new information).

I talked about al-Fārābī’s account of how a science can demonstrate the principle of another science in the *Book of Demonstration* above, and I briefly talked about, without much detail, how a science expands deductively by demonstrating its problems from its principles in the *Book of Demonstration*. In the *Attainment*, we have a simplified but more compact (and easier to follow)

account of how a science provides the knowledge of the principle of another science and how a science deductively expands (unlike in the *Book of Demonstration*, al-Fārābī does not talk about the expansion of the sciences or arts by experience in the *Attainment* passage under discussion). According to the *Attainment* account, we start from the principles of instruction of a science. (For ease of discussion, I will consider only one thing in each step of inference, but al-Fārābī sometimes talks about multiple things in each step, and in a real science, almost certainly there will be multiple things in each step.) Let's assume A is my principle of instruction in this science. If A is also the principle of being for this science, we keep deducing downwards (i.e., from the causes to the effects) from A until we exhaust the knowledge of everything under the underlying genus of this science whose knowledge is sought in this science. If A is not also the principle of being for this science, from A we demonstrate the 'that' of B which is the cause of A and is the cause of other things besides A, say C, which we did not know before. Now that we have gained the knowledge of B, we can use it to demonstrate the 'why' of A as well as both the 'why' and the 'that' of C. In the initial state, we only know *that* A holds. In the second step, we expanded our knowledge 'vertically' (with respect to A) in the sense that we gained the knowledge *that* B holds, which is the cause of A. Ultimately, we expanded our knowledge also 'horizontally' (with respect to A) in the sense that we gained the knowledge *why* A holds, and the knowledge of both the 'that' and the 'why' of something else (sc. C) which is on the same 'causal-level' as A, i.e., it is caused by the same thing as A is caused by (sc. B). After we derive the knowledge of all the things for which B is the principle of being from the knowledge *that* B holds, we turn our attention to B. Now using B as our principle of knowledge for its cause, say D, we demonstrate *that* D holds. And we repeat the procedure. Using the knowledge of D, we demonstrate *why* B holds; we also demonstrate both the 'that' and the 'why' of anything else for which D is the principle of being, say E, which was not known to us up to that point. In this way, we move up in the causal chain, but in each step up to the knowledge of the 'that' of the cause, we use the recently obtained knowledge of this cause to demonstrate the 'that' and the 'why' of all its effects, including the ones of whose existence we were not even aware of prior. In this manner, we move up all the way to the highest principles in the underlying genus of this science. If the highest principle in this genus, say X, is not the highest absolute principle in the sense that it has a further cause, say Y, but that cause is outside the scope of this science, we use our recently gained knowledge of *that* X holds to demonstrate *that* Y holds and Y becomes the first principle

of instruction in this other science; in this way, we use the knowledge of the highest principle of being in a science to attain the knowledge of the first principle of instruction in another science, and in this way, we epistemically move from the domain of one science to the domain of a prior science¹⁹⁸ in the sense that this prior science comprehends the principle of being for the highest principle of being in the posterior science. It is worth emphasizing here that al-Fārābī does not claim that *all* the principles of a prior science are demonstrated from the posterior science in this way; rather, he claims that *some* of the principles of the prior science are demonstrated from the posterior science in this way. Moreover, as we will see, al-Fārābī's following discussions suggest that this is not the *only* way in which we proceed from one science into another, i.e., by reaching the highest principles of being in the posterior science and using those to demonstrate the existence of some principles of instruction in the prior science.

This account of how knowledge expands within a science and from one science into another in the *Attainment* is applied to the theoretical sciences of mathematics, natural science, metaphysics, and human science or political science. The mathematical sciences are discussed in E10-12, A9-11. Al-Fārābī asserts that the primary genera which are “the easiest [*ashal*]” for us to understand and “the most fitting that perplexity [*ḥayra*] and confusion of the mind [*iḍṭirāb al-dhihn*] do not occur” in them are numbers and magnitudes (*al-a 'dād wa-l-a 'zām*) (9, p.129 lines 3-5). Accordingly, the mathematical concepts seem to be clear and distinct in the sense that we would not have difficulty in understanding them, and when we understand them, we are unlikely to have confusion about them. This seems to justify the position of the mathematical sciences as the first in the epistemic order of the sciences. We will also see that the next science in this order, i.e., natural science, depends on mathematics in a relevant way. In the following discussion, al-Fārābī presents the individual mathematical sciences in an order. The first is arithmetic, i.e., the study of numbers. Then comes geometry, the study of magnitudes. This order is grounded in the fact that geometry studies magnitudes and their properties in two respects: insofar as number is (*per se*) attributed to magnitudes (*yalḥaquhā*) or insofar as magnitudes are treated as such. After geometry, we study other things with their properties insofar as number is (*per se*) attributed to them or insofar as magnitude is (*per se*) attributed to them or insofar as both number and

¹⁹⁸ As far as I see, the terms “the prior science” and “the posterior science” are not explicitly used in the *Attainment*, but since the definition of the prior and the posterior sciences in the *Book of Demonstration*, as explained in Section 3, seems to fit to the relations between these sciences discussed here in the *Attainment*, I believe it is justified to use these terms here.

magnitude are (*per se*) attributed to them. In this way, we get to the ‘applied’ mathematical sciences: optics, the study of moving spheres, astronomy, music theory (‘*ilm al-mūsīqā*’), the study of weights (‘*ilm al-athqāl*’), and mechanics (‘*ilm al-ḥiyāl*’). Al-Fārābī goes on to assert in the *Attainment* E11, A10 that the principles of instruction in the mathematical sciences are also the principles of being. So, in the mathematical sciences, we proceed ‘downwards’ deductively in the sense that starting from the highest causes in these genera, we proceed to demonstrate both the ‘*why*’ and the ‘*that*’ of what follows. Al-Fārābī points out that the mathematical sciences, strictly speaking, use only the formal cause as a principle of being. So, the demonstration of the ‘*why*’ in the mathematical sciences is limited to giving demonstrative answer to the questions of the formal cause, which according to al-Fārābī are introduced by “what [*mādhā*],” “by what [*bi-mādhā*],” and “how [*kayfa dhā*].”¹⁹⁹

We would expect that the order of arithmetic, geometry and finally the ‘applied’ mathematical sciences would reflect an order in which the former demonstrates some of the principles of the latter. In fact, as we saw above, al-Fārābī says in the *Book of Demonstration* that arithmetic does not use any premise demonstrated in any other science, but geometry uses premises demonstrated in arithmetic (65 lines 11-2, 3-4). Moreover, as mentioned above, the study of moving spheres is “under” geometry in the technical sense that its subject is not simply a species of the subject of geometry (as in spherics) but is more special than the subject of geometry without being a species of it. Likewise, the study of weights and optics are also under geometry (64 lines 13-19). We can add that all the other ‘applied’ mathematical sciences are under arithmetic or geometry. It is also presented above that according to al-Fārābī’s account in the *Book of Demonstration*, a superior science demonstrates the ‘*why*’ (or both ‘*why*’ and ‘*that*’) of some of the principles of the subordinate science. If we combine these with the view of the order of the mathematical sciences in the *Attainment* account, it seems that we start from arithmetic, then in arithmetic the ‘*why*’ and the ‘*that*’ of some principles of geometry are demonstrated but

¹⁹⁹ See E6, A5 for a more general account of the interrogative particles used to request the knowledge of each of the four kinds of the causes. Apart from the three questions used for the formal cause already mentioned, “from what [*‘ammādhā*]” is used to request the knowledge of both the efficient and the material causes, and “for what [*li-mādhā*]” is used to request the knowledge of the final cause. That “from [*‘an*]” can be used to indicate both the efficient cause and the material cause has its ultimate source in *Met.* Δ.24 on “*ek*.” Uṣṭāth translates “*ek*” in this chapter as “*min*” (the textus on p.655-6 is missing in the Arabic ms. and is back translated into Arabic by the editor Bouyges but Averroes’ citatio is in part extant and has “*min*” for “*ek*”: see 660.4-6 and the following citations), but al-Fārābī’s rendering of this account in *KH* 107 has “*‘an*.” These interrogative particles, and others, used in scientific contexts are extensively discussed by al-Fārābī in the third part of *KH*.

other principles of geometry are also assumed (or maybe some are demonstrated in natural science: see below). Al-Fārābī's claim that geometry studies magnitudes and their properties in two respect, either as such or insofar as number is (*per se*) attributed to them seems to suggest that the principles of geometry demonstrated in arithmetic will be particularly relevant for the demonstrations of the propositions in geometry that deal with magnitudes and their properties insofar as number is (*per se*) attributed to them. Similarly, arithmetic or geometry demonstrate the 'why' and the 'that' of some of the principles of the 'applied' mathematical sciences under them, but other principles of these 'applied' mathematical sciences are also assumed in addition and it seems that some of them are demonstrated by natural science (more on this, see below).²⁰⁰

Al-Fārābī repeats the mentioned order of the mathematical sciences in the *Attainment* E12, A11, but it is presented here such that the dependence on matter grows as we proceed downwards in that order. He asserts in the previous paragraph that numbers and magnitudes are “abstracted from matter in the intellect” (131 line 13) and as such, we use only the formal cause in their investigation. In E12, A11, he first says that the understanding (*tafahhum*) and the representation (*taṣawwur*) of the objects studied in arithmetic and geometry are without matter, but he adds that as we proceed into the 'applied' mathematical sciences, the understanding, the representation, and the intellectual grasping (*aql*) of their objects require reference to matter in an increasing degree so much so that we come to be forced to introduce the causes other than the formal cause into our investigation.

Al-Fārābī presents an order of the mathematical sciences in terms of the degree to which the knowledge of their objects requires a reference to matter in the *Book of Demonstration* too. This account is broadly similar but has some interesting differences. According to the *Book of Demonstration* account, arithmetic is the most separate from matter in the knowledge of its objects, then comes geometry, and then the 'applied' mathematical sciences are ranked because in the 'applied' mathematical sciences “in the definitions of their subjects, with a few exceptions, matter shows itself [*taẓharu*] or almost shows itself” (70 lines 3-9). It seems in the *Attainment* account that both arithmetic and geometry are equally separated from matter in the knowledge of their objects; in the *Book of Demonstration* account, al-Fārābī gives priority to arithmetic. The

²⁰⁰ In the *Attainment*, al-Fārābī does not seem to consider the general common principles of the sciences like “one thing is the contrary of one thing” that he says are demonstrated in metaphysics in the *Book of Demonstration* (65 lines 23-4) and used as a principle in the other sciences.

reason seems to lie in the difference between the subjects of arithmetic and geometry as we can gather from the preceding discussion in the *Book of Demonstration* (69-70). Accordingly, it seems that what is studied by arithmetic and geometry, i.e., numbers, magnitudes and their *per se* attributes subsist in reality (*fī al-wujūd*) in their subjects but they are treated as separated from their subjects in knowledge (*fī al-ma'rifa*). Yet the subjects in which numbers subsist in reality are different from the subjects in which magnitudes subsist in reality. Magnitude subsists in things which are not separated from matter in reality, i.e., corporeal things studied by natural science. By contrast, number subsists both in these as well as in the things which are separated from matter in reality, i.e., the incorporeal things studied by the theology part of metaphysics. To repeat, numbers subsist in reality in corporeal and incorporeal things but are treated to be separate from these in knowledge only, and magnitudes subsist in reality in corporeal things but are treated to be separate from these in knowledge only. That the real subjects of magnitudes are corporeal (i.e., material) but the real subjects of numbers are both corporeal and non-corporeal (i.e., material and immaterial) seems to ground al-Fārābī's claim that arithmetic is separated from matter in the knowledge of its objects to a greater degree than geometry. In this way, geometry and natural science have a common subject but they study it from different aspects (the natural scientist, insofar as the corporeal things have sources of motion and rest in themselves; the geometer, insofar as they are measured (*yuqaddaru*) or other things are measured by them); likewise, metaphysics (or more specifically the ontology part) and arithmetic have a common subject but they study it from different aspects (the ontologist (or as al-Fārābī puts it, the person "who uses being simpliciter" 69 line 20), insofar as these corporeal and non-corporeal things are characterized by the most general predicates; the arithmetician, insofar as these corporeal and non-corporeal things are measured or other things are measured by them). Apparently al-Fārābī's reason for saying that the real subjects of numbers are both corporeal and non-corporeal things but the real subjects of magnitudes are only corporeal things is that we can talk about the shape and the volume etc. of bodies studied by natural science, but not of the incorporeal things studied by theology. For example, the separate intellects which are the causes of the heavenly spheres do not have shapes or volumes. However, they are numbered. There are nine such separate intellects.²⁰¹

²⁰¹ As al-Fārābī puts it in *MF* Ch. 3, there are nine heavenly spheres and each has its separate intellect: the heavenly spheres of the seven 'wanderers', plus the sphere of the fixed stars, plus "the first heaven [*al-samā' al-awwal*]".

In any case, both in the *Book of Demonstration* account and the *Attainment* account, the ‘applied’ mathematical sciences can understand their objects with greater reference to matter. As its put in the *Book of Demonstration*, “in the definitions of the subjects of [the ‘applied’ mathematical sciences], with a few exceptions, matter shows itself [*taḏharu*] or almost shows itself.” As it is put in the *Attainment* E12, A11, the understanding of the object of the ‘applied’ mathematical sciences require reference to matter to such a great degree²⁰² that an investigator in one of these sciences find himself compelled to introduce the causes other than the formal cause into his investigation:

T12 *Attainment*, E12-3, A11-2 133.9-134.2

فيكون قد صار متاخما وفي الوسط بين الجنس الذي ليس له من مبادئ الوجود إلا ماذا وجوده وبين الجنس الذي توجد لأنواعه المبادئ الأربعة فحينئذ تلوح له المبادئ الطبيعية فعند ذلك ينبغي أن يشرع في علم الموجودات التي توجد لها مبادئ الوجود الأربعة وهو جنس الموجودات التي لا يمكن أن تصير معقولة إلا في مواد، فإن المواد تسمى حينئذ الطبيعية.

فينبغي للناظر عند ذلك أن يأخذ كل ما في جنس الأمور الجزئية من مبادئ التعاليم وهي المقدمات الأول وينظر أيضا فيما قد حصل له من العلم الأول فيأخذ منه ما يعلم أنه يصلح أن يجعل مبادئ التعلم في هذا العلم.

Then he would come to be on the border [with another science] and in the middle of the genus which has only “what is its being” [i.e., the formal cause] as its principle of being and the genus whose species have [all] the four principles. Here, the natural principles would become visible to him. So, at that point, he must enter into the science of the

More on the first heaven see Footnote n.222 below. It seems that the claim that the subject-matter of arithmetic pertains to everything but the subject-matter of geometry pertains only to some beings is somehow related to the claim that arithmetic is prior to geometry in that none of the principles of the arithmetic is demonstrated in another science but arithmetic demonstrates some principles of geometry.

²⁰² The idea that the objects of ‘applied’ mathematical sciences have greater reference to matter have its ultimate root in Aristotle. As mentioned above in Section 1, and discussed in greater detail in Footnote n.208 below, in *Phys.* II.2, Aristotle raises two connected difficulties for distinguishing mathematics from natural science. First, natural bodies contain point, lines, surfaces etc. and these are studied by mathematics (geometry to be more specific). Second, astronomy is treated as a mathematical science, but it also appears like a branch of natural science as we would expect a natural scientist to study at least some of what an astronomer studies, like the shape of the moon and the sun. Aristotle’s solutions to these two connected difficulties are also connected. He first argues that geometry studies the limits of natural bodies (points, lines etc.) but not as limits of natural bodies, but rather as separated from motion, with the implication that being subject to motion characterizes natural bodies as natural. Then, Aristotle makes a distinction between two kinds of mathematical sciences: “more natural ones among the mathematical sciences [*ta phusikōtera tōn mathēmatōn*], like optics, harmonics [or music theory, *harmonikē*], and astronomy... have a reverse way compared to geometry; for geometry investigates natural lines but not *qua* natural, while optics [investigates] mathematical lines but not *qua* mathematical but rather *qua* natural” (194a7-12).

beings which has [all] the four principles of being. [This latter genus] is the genus of the beings which cannot be intellectually grasped [*taṣīra ma 'qūla*] except in reference to matter [*fī mawādd*] so that at this moment the material things [*al-mawādd*] would be called the natural things.

Here the investigator must take the principles of instruction which are in the genus of particular things, and [these principles of instruction] are the first premises [*al-muqaddimāt al-uwal*], and he should also look into what came about in him from the first science [sc., mathematics] [*fī-mā qad ḥaṣala lahu min al- 'ilm al-awwal*]²⁰³ and from it he takes whichever he knows to be appropriate to be made principles of instruction [*al-ta'allum*] in this science [sc., natural science].

²⁰³ Mahdi translates *al- 'ilm al-awwal* as “the primary knowledge.” In that case, the reference is not back to mathematics, as I take it, but to what I called the self-evident truths in my discussion of the *Book of Demonstration* above. Towards the very beginning of the *Attainment*, al-Fārābī says that there are two kinds of instances of knowledge (‘ulūm): “some come about in a human being [*yaḥṣulu li-l-insān*] from the very beginning without him noticing [*yash'uru*] or being aware of how and from where they came about, and these are the instances of first knowledge [*al- 'ulūm al-awwal*]. Others come about by the consideration [of the subject] [*ta'ammul*] and from investigation [*fahṣ*], inference [*istinbāṭ*], and instruction and learning [*ta'mīl wa-ta'ammul*]. The things which are known by first knowledge [*al-ma'lūma bi-l- 'ulūm al-uwal*] are the first premises [*al-muqaddimāt al-uwal*]; from these, one attains [*yuṣāru ilā*] instances of knowledge which come about from investigation, inference, and instruction and learning” (E2, A1). So, in this passage, al-Fārābī uses “*al- 'ulūm al-uwal*” to refer to the self-evident truths and Mahdi translates both the “*al- 'ulūm al-uwal*” here and the “*al- 'ilm al-awwal*” in T12 above as “primary knowledge.” However, also in the passage quoted in this footnote, al-Fārābī specifies that the things known by the sort of knowing characterized as ‘ilm *awwal* are “the first premises [*al-muqaddimāt al-uwal*]” and he also talks about “the first premises” in T12 above where he characterizes two kinds of principles of instruction used in the natural sciences: 1. the appropriate first premises 2. whatever is appropriate from first knowledge. In other words, according to Mahdi’s translation, al-Fārābī would be repeating the same thing. So, this is one piece of evidence that supports my taking the “*al- 'ilm al-awwal*” in T12 as referring to mathematics over Mahdi’s taking it as referring to the self-evident truths. A second piece of evidence is to be found in the last sentence of T12 that is under consideration. In this sentence, al-Fārābī asserts that the investigator of natural science takes the appropriate premises from what came about in him “*min al- 'ilm al-awwal*” to use them as his principles in instruction “*fī hādhā al- 'ilm*,” i.e., natural science. So, *al- 'ilm al-awwal* seems to be contrasted with *hādhā al- 'ilm*; if so, since the latter means science, the former should also mean science specifically, not knowledge. If the former means science, the obvious reference of the “first science” would be mathematics, as it is the first proper science (as logic is not considered a science here) that is discussed in the *Attainment*. Another piece of evidence is that in the preceding passage about the mathematical sciences whose conclusion is quoted in the first half of T12, al-Fārābī builds up a transition from the mathematical sciences into natural science. Indeed, as I mentioned above and discuss in detail below, in the *Book of Demonstration*, al-Fārābī says that astronomy demonstrates the ‘that’ of some of the principles of natural science. According to Mahdi’s translation, there is no indication that the principles of instruction of natural science have anything to do with the mathematical sciences. Finally, the language of the transition here from mathematics into natural science is very similar to the language of the transition from natural science to metaphysics in the *Attainment* which is quoted in T14 below and discussed there. In the transition from natural science to metaphysics in T14, al-Fārābī says explicitly that in metaphysics he follows the methods that he followed in natural science and that there are two kinds of principles of instruction for metaphysics: first, “the first premises” that are appropriate for metaphysics, and second, the premises which “are demonstrated in natural science and are suitable to be used as principles of instruction in this genus,” sc., the subject of metaphysics.

We see that al-Fārābī proposes a passage from the mathematical sciences into natural science: we take some things demonstrated in mathematics that are appropriate to be made principles of instruction in natural science. Since right before this passage, al-Fārābī says that matter shows itself in the ‘applied’ mathematical sciences, and with this we feel the need to study all the four principles of being, and hence find ourselves passing into natural science, these premises demonstrated in mathematics and taken as principles of instruction in natural science are likely to be demonstrated in the ‘applied’ mathematical sciences (if not all, then most of them). As we see in T12, to these principles of instruction for natural science that are (as a whole or mostly) demonstrated in the ‘applied’ mathematical sciences, we add some other relevant “first premises” that concern particular things. These “first premises” are what I called the self-evident truths in my discussion of the *Book of Demonstration* above.²⁰⁴ Using both of these two kinds of principles of instruction, we demonstrate propositions about the ‘that’ and the ‘why’ of the bodies and what is in bodies in respect of all the four causes (E14, A12). Even though we see that al-Fārābī proposes a passage from the ‘applied’ mathematical sciences into natural science, the details of this passage are not clear. It cannot be the way that al-Fārābī describes above in the *Attainment* and I summarized above. Recall that according to this way, the principles of instruction of the posterior science are different from its principles of being, and starting from its principles of instruction, we climb up to the highest principle of being, i.e., cause in this science. Then using this highest cause, we demonstrate the existence of its cause, stepping out of the genus studied by the posterior science. This new thing whose existence alone is demonstrated using the highest cause in the posterior science becomes a principle of instruction in the prior science. This account does not fit into the passage from the mathematical sciences into natural science because the entry point in the mathematical sciences into natural science is not the highest causes in the mathematical sciences; rather, since the principles of instruction are the same as the principles of being in mathematics, the order of arithmetic, geometry, and the ‘applied’ mathematical sciences would follow the order of causes into effects, broadly speaking. So, as it were, we start from the top in the real causal order in the mathematical sciences, we descend down, and when we hit the lowest with the ‘applied’ mathematical sciences, matter shows itself and we transition into the natural sciences. So, the passage from mathematics into

²⁰⁴ More on this point that the “first principles” here refer to what I called the self-evident truths above, see the previous footnote.

natural science should be acknowledged as a way of passing from one science into another that is different from the way that al-Fārābī explicitly described above in the *Attainment* and I summarized above.

Still, we have not specified what sorts of things demonstrated in the ‘applied’ mathematical sciences are used as principles of instruction in natural science. As in the other way of passing from one science into another that al-Fārābī explicitly describes in the *Attainment* and I summarized above, we might assume here that we use P1 demonstrated in some ‘applied’ mathematical science to demonstrate the ‘*that*’ of some premise, P2, which is to be used as a principle of instruction in natural science, and in turn, from P2 we can demonstrate the ‘*why*’ of P1. In fact, al-Fārābī’s description of the cooperation between the mathematical sciences and natural science in the *Book of Demonstration* supports this. As summarized above, al-Fārābī states in T9 of the *Book of Demonstration* that astronomy, an ‘applied’ mathematical science, demonstrates the ‘*that*’ of some principles of instruction in natural science and metaphysics; in turn, natural science demonstrates the ‘*why*’ or both the ‘*that*’ and the ‘*why*’ of many things in mathematics, and metaphysics does so for many things in natural science and mathematics. As I will say more about this below, in the *Attainment* there is nothing that al-Fārābī says suggesting that a mathematical science directly demonstrates a principle of instruction in metaphysics. Rather, the principles of instruction in metaphysics are either relevant self-evident truths or they are demonstrated in natural science. Nonetheless, as it will be explained in greater detail below, according to al-Fārābī one point of entry from natural science into metaphysics is the heavenly bodies; in other words, the causes of being for the heavenly bodies are separate immaterial intellects and they are studied no longer in natural science but in metaphysics. It seems that when al-Fārābī says in the *Book of Demonstration* that astronomy demonstrates the ‘*that*’ of some principles of metaphysics, he should instead say in accordance with his more considered view that natural science demonstrates that the immaterial causes of being for the heavenly bodies exist.²⁰⁵ I also argued above right before T9 that in T9 and the surrounding passage in the *Book of Demonstration*, al-Fārābī implies that a prior science demonstrates the ‘*why*’ (and in some cases also the ‘*that*’) of the *principles*, specifically, of a posterior science. If we combine this with the picture we teased out from the *Attainment*, it seems that something demonstrated in

²⁰⁵ It is possible that al-Fārābī says that astronomy provides the ‘*that*’ of some principles of metaphysics thinking, in particular, of passages like *Met.* Λ.8 1073b3-8.

astronomy, say P1, is used to demonstrate the ‘*that*’ of some principle of instruction in natural science, P2. In turn, we can expect from al-Fārābī’s description of the passage from one science into another that using P2, we can demonstrate the ‘*why*’ of P1. But recall that in the mathematical sciences, the principles of instruction are the same as the principles of being. So when something is demonstrated in a mathematical science, its ‘*that*’ is demonstrated with its ‘*why*’. What would be an example of such propositions P1 and P2, in particular, such that we demonstrate the ‘*why*’ of P1 twice, once in astronomy and the second time in natural science? This is the first question we should answer. Moreover, as I recapped right above, it seems according to the *Book of Demonstration* picture that natural science demonstrates the ‘*why*’ (and also the ‘*that*’) some of the principles of instruction in some mathematical sciences. But what would be an example of such a demonstration of a principle of instruction for a mathematical science in natural science? This is the second question.

We find a very useful hint to answer these two questions in the *Book of Demonstration*. First, recall that in *On the Aims*, al-Fārābī states that mathematics uses only the formal cause in its demonstration of the ‘*why*’, while natural science uses all the four causes (this is also repeated in *KH* 16 and *KH* 236-7). In the *Book of Demonstration* 67-8, al-Fārābī argues that one way in which two arts (i.e., sciences or including sciences) can share in demonstrating the same thing is that they demonstrate its different causes. In particular, this happens when one of the arts demonstrates the ‘*why*’ only for some causes so that two arts can demonstrate the ‘*why*’ of something for different causes. Al-Fārābī asserts that “it is known that all the other causes necessarily follow [*yatba ‘u*] the end [*al-ghāya*]; likewise, the matter and the efficient cause are so in a way” (68 lines 3-4). So, he adds, if one of these three causes is cited in the definition of something, all the other causes also must be cited in it as well. In other words, if an art uses definitions which cite one of these three causes (sc. final, material, and efficient), its definitions must also cite all the other causes. However, a definition citing the formal cause does not have to cite also the other causes. That is to say, there can be an art which has definitions citing *only* the formal causes, but there cannot be an art whose definitions cite the final cause or the efficient cause or the material cause but not also all the other causes.²⁰⁶ In particular, the arts which

²⁰⁶ This seems to be too strong a claim. As we will see below, al-Fārābī asserts in the *Attainment* that since the subjects of metaphysics other than God are immaterial but caused (sc. the separate intellects which are the causes of the heavens and the Active Intellect), they are investigated with respect to all the three causes apart from the material cause.

investigate “motion and the beings insofar as change is (*per se*) attributed to them” have definitions which cite one of the three causes (and hence, all the others), while “each [art] which comprises things which are not moved at all and [each art which] investigates the things to which change is (*per se*) attributed though not insofar as change is (*per se*) attributed to them”²⁰⁷ have definitions which cite only the formal cause (68 lines 14-19). The natural sciences are of the former sort, while the mathematical sciences are of the latter. So, mathematics and natural science can share in demonstrating the ‘*why*’ about the same thing, but mathematics would demonstrate it in respect of the formal cause while natural science would demonstrate it in respect of some other cause. More concretely, “for this reason, the spherical shape [*kuriyya*] of the earth, the world, the sun, and the moon came to be something which is investigated by both mathematics and natural science together” (68 lines 23-4).²⁰⁸

²⁰⁷ As the translators of the Turkish translation of the *Book of Demonstration* point out (p.72 n.9), the meaning of the passage demands that we should also add the phrase لا من جهة ما يلحقها التغيير to the end of this clause; this phrase is in one of the mss. (namely, MS Tehrān Kermān 211) as the editor of the Arabic text Fakhrī notes in the apparatus, but he does not adopt this reading. Recall that, as noted in Footnote n.152 above, Fakhrī argues that this ms. belongs to an inferior branch of the tradition, but he sometimes adopts the readings from this branch. Indeed, this additional phrase could easily fall out in the tradition due to homoioteleuton. That said, perhaps the fact that this additional phrase is only in one ms. in its branch and not in the other closely related MS Tehrān Shūrāy-e Mellī 595 suggests that this phrase is a gloss. In that case, the meaning of the text clearly requires that the Arabic text should be emended and adding that phrase we find in MS Tehrān Kermān 211 seems like a reasonable emendation. So even if the copyist (or a reader) of this ms. or of its ancestor emended the text, we should adopt their emendation (or we should adopt an emendation with a similar meaning).

²⁰⁸ As I also discussed above, in *Phys.* II.2, Aristotle raises two related difficulties about the delineation of the subject-matters of mathematics and natural science, and al-Fārābī directly responds to one of them here. The two difficulties Aristotle raises are supposed to show that some topics seem to be studied both by mathematics and natural science. First, he says that mathematics studies points, lines, surfaces, and solids but natural bodies also have this. Second, he asks whether astronomy is part of natural science “for if it belongs to the natural scientist [*tou phusikou*] to know about what the sun is and what the moon is, it would be unusual [*atopon*] [for him to know about] none of [their] *per se* attributes, especially because the natural scientists [*hoi peri phuseōs*] clearly talk about the shape of the moon and the sun, and they also [discuss] whether the earth and the world are spherical or not” (193b25-30). Al-Fārābī clearly responds to this difficulty in the passage from the *Book of Demonstration* under consideration above. Aristotle’s solution to these two difficulties has two steps. First, he argues that the mathematician investigates the point, and the line etc. which are in reality in natural bodies, but he investigates them not *qua* limits (*peras*) of natural bodies. Nor does the mathematician study the attributes of, e.g., the moon like its shape *qua* an attribute of this natural body. Instead, the mathematician separates them in thought (*tē(i) noēsei*) from motion (193b31-35). Aristotle does not say it explicitly here, but in the preceding chapter (sc. *Phys.* II.1) he defined nature as the principle of motion and rest in something *qua* itself; so if the mathematician studies the point, the line etc. or the shape of the moon etc. as separated from motion, he would be studying these things which are in reality limits or attributes of natural bodies as separated in thought from the main thing that connects them to something natural, i.e., motion (and, as the privation of motion, rest; it is worth noting that rest (*stasis*) is not simply a contradictory of motion but rather it is “the privation [of motion] in what admits [motion] [*sterēsis... tou dektikou*];” so if something is rendered such that motion does not pertain to it at all, it is outside of the genus in which motion and rest apply. That rest is the privation and not the contradictory of motion, see *Phys.* V.2 226b10-6). After saying that mathematics studies the limits and the attributes of natural bodies but *qua* separated from motion, Aristotle directly address the concern as to whether astronomy is a natural science or a mathematical science. Calling optics,

Although al-Fārābī does not spell out this example, we can. For this purpose, it is useful to briefly review the role of experience (*tajriba*) as a starting-point of scientific knowledge in the *Book of Demonstration* p.71-2. As mentioned above, al-Fārābī asserts that the first principles of the sciences are either the self-evident truths, or they are acquired by experience. Some of the arts that use experience limit themselves to what comes about by experience and expand only by collecting results of experience, while others use the results of experience to infer the knowledge of something else. Moreover, experience by itself gives only the knowledge of the ‘*that*’ of something, not its ‘*why*’. Al-Fārābī describes two ways in which experience is collected in one art but is used in another art. According to the first way, one art, which limits itself to collecting results of experience, provides the principles for the second art, and the second art expands our knowledge by making inferences from these principles, and such pairs of arts are sometimes thought to be one and the same art. According to the second way, there is a mutual exchange between the art which collects the results of experience and the art which uses these results of experience to make inferences such that “the experiential [art] [*al-tajrībiyya*] helps the syllogistic [art] [*al-qiāsiyya*] concerning the thing for which syllogism is not enough, and the syllogistic [art] helps the experiential [art] concerning the thing for which experience is not enough” (72 lines 8-9). In the second way, too, the relevant pair of arts are thought to be the same art, just as people think that medicine and natural science are the same art or that medicine is a part of natural science, and likewise with the practical art of ruling (*al-siyāsa al-‘amaliyya*) and the theoretical art of ruling (*al-siyāsa al-‘ilmiyya*).

All these considerations about the role of experience in science in the *Book of Demonstration* clearly derive from *APo* I.13 78b34-79a16. I am not going to report all the differences between Aristotle’s account in this passage and al-Fārābī’s account that I summarized above. I just want to note two points Aristotle makes which are not explicit in al-Fārābī’s account but are relevant for our current purpose and I think it is reasonable to attribute these two points to al-Fārābī too. First, Aristotle seems to imply that in the case of two cooperating sciences where the first

harmonics, and astronomy “more natural ones among the mathematical sciences [*ta phusikōtera tōn mathēmatōn*],” he says that these ‘applied’ mathematical sciences “have a reverse way compared to geometry; for geometry investigates natural lines but not *qua* natural, while optics [investigates] mathematical lines but not *qua* mathematical but rather *qua* natural” (194a7-12). This claim obviously invites further clarification, and it seems that al-Fārābī tries to supply a clarification of the sense in which both astronomy, a mathematical science, and natural science study the spherical shapes of the moon etc.

provides the knowledge *that* a proposition holds from experience and the second make inferences from this proposition, the second science provides the knowledge of *why* this proposition holds.²⁰⁹ As summarized above, al-Fārābī does not add that the art which uses the results of experience handed over from the other art demonstrates the ‘*why*’ of these results. That said, al-Fārābī says that the art which uses the results of experience makes inferences from them (without specifying what it infers) and according to the second way, the syllogistic art helps the experiential art when experience falls short in it (without specifying how it helps). Both cases are compatible with the view in Aristotle that the art which makes inferences also demonstrates the ‘*why*’ of the proposition whose ‘*that*’ it took from the art which collects the results of experience, but especially the second case with the experiential and the syllogistic art working together lends itself to this interpretation. The second point Aristotle makes but is not explicit in al-Fārābī is that among the examples of the two sciences or arts where one is experiential and the other uses the results of experience, Aristotle mentions (mathematical) astronomy (*astrologia*) and observational (astronomy) (*ta phainomena*). Al-Fārābī mentions astronomy (*‘ilm al-nujūm*) and contrasts it with astrology (*aḥkām al-nujūm*) in the *Book of Demonstration* passage under consideration: he says that astrology, and many practical arts, limit themselves to what comes about by experience, while astronomy infers the knowledge of other things using what comes about by experience.²¹⁰ One could perhaps think that al-Fārābī uses *aḥkām al-nujūm* in the sense of *ta phainomena* in Aristotle, but al-Fārābī does not say anything explicit in the *Book of Demonstration* passage under consideration that suggests that *aḥkām al-nujūm* collects

²⁰⁹ The whole passage 78b34-79a16 is about one science providing the knowledge of the ‘*that*’ and other the ‘*why*’, but for the specific point about a science or discipline that supplies the results of experience and another which uses these results, see especially 79a2-6: in this passage Aristotle explicitly talks about some mathematical sciences and the disciplines of perception (*tōn aisthētikōn*) which supply data to those mathematical sciences, but I think this can be generalized to any two sciences which cooperate in the relevant way, whether one of them is a mathematical science or not. In any case, my current interest is to talk about astronomy, so even if this claim is limited to the mathematical sciences, the point of this passage would still work for my purpose. As I mention below, among the examples of such a pair of cooperating sciences or arts, Aristotle mentions astronomy (*astrologia*) and observational (astronomy) (*ta phainomena*). He seems to imply also at *PA* I.1 639b7-10 that astronomy takes the results of observation (*ta phainomena*) and explains why they hold. This passage comes up in Aristotle’s clarification of the method of investigation to be adopted in natural science, including the one to be undertaken in *PA*. In the cited passage, he asks “whether the natural scientist should [proceed] in the way in which the mathematicians show things in astronomy [*ta peri tēn astrologian*] [that is, the natural scientist should] first observe [*theōrēsanta*] the *phainomena* about the animals and the parts of each [animal], and then in this way [i.e., as the astronomer does], [he should] state the ‘*why*’ and the causes [*to dia ti kai tas aitias*], or [he should proceed] in some other way.” The analogy implies that first we observe the astronomical *phainomena* and then we, as astronomers, show the ‘*why*’, i.e., the causes of these *phainomena*.

²¹⁰ Also mentioned above in Footnote n.161.

astronomical data and hands it over to astronomy in the first way described above, or *aḥkām al-nujūm*, as an experiential art, helps astronomy, as a syllogistic art, when syllogisms in astronomy fall short and astronomy helps *aḥkām al-nujūm* when experiences in it fall short. Besides, the Arabic translation of the *APo* I.13 renders “*ta phainomena*” literally as “*al-ẓāhirāt*.”²¹¹

Nonetheless, al-Fārābī talks about the arts which take the results of experience from another art which limits itself to collecting results of experience and he says that astronomy is such an art. So, however the experiential art from which astronomy takes the results of experience it uses is called by al-Fārābī, he acknowledges the existence of such an art. To avoid ambiguity, I will call such an art observational astronomy and by this, I mean what Aristotle means by “*ta phainomena*” in the *APo* I.13 passage under consideration (or the art which records and organizes *ta phainomena* concerning things in the heavens).²¹²

Having clarified the role of experience as a starting-point of scientific knowledge, we have all the theoretical tools assembled to spell out al-Fārābī’s claim that both mathematics and natural science study the spherical shape of the moon etc. but one does so with regard to the formal cause while the other does so with regard to the remaining three causes. I should add at the beginning by way of a caveat that my following examples are cruder than the examples al-Fārābī would likely provide if he was pressed, perhaps after enlisting the help of a practicing astronomer; also depending on how al-Fārābī would formalize the scientific discourse based on his understanding of how it should be presented in a context of justification as summarized above, what I propose to be taken as a principle might be formalized by him as a consequence of some other principles, and the consequences of what I propose to be taken as a principle might be taken as a principle by him. In any case, I will formulate some examples, and my point is that al-Fārābī would probably formulate similar examples if he was pressed. I will formulate two

²¹¹ P.372 in Badawi’s edition. As stated in the *Fihrist* (Flügel 249 = Sayyid v.2 163), Ḥunayn translated some of *APo* into Syriac and Ishāq translated all of it into Syriac; Abū Bishr translated Ishāq’s translation into Arabic.

²¹² After Aristotle argues at *APo* I.13 78b34-9 that the superior science proves the ‘*why*’ and the subordinate science proves the ‘*that*’ of the same thing like geometry and optics, or astronomy and “*ta phainomena*,” he adds that “some of these sciences have pretty much the same names [*schodon de sunōnumoi eisin*], e.g. mathematical astronomy and nautical astronomy [*astrologia hē te mathēmatikē kai hē nautikē*]” (78b39-79a1) and Abū Bishr translates mathematical astronomy here as “*ilm al-nujūm al-ta ‘ālīmī*” (Badawi p.372). Also, in a related passage in the *Book of Demonstration*, when al-Fārābī says that some arts limit themselves to the results of experience while others use the results of experience to infer the knowledge of other things, he mentions “mathematical astronomy [*ilm al-nujūm al-ta ‘ālīmī*]” as an example of the latter (p.71 lines 20-1). That said, when Aristotle and al-Fārābī simply use “astronomy,” they usually mean mathematical astronomy, i.e., an ‘applied’ mathematical discipline. So, following their practice, when I use “astronomy” by itself, I mean mathematical astronomy in contrast with what I call “observational astronomy.”

examples: one about the spherical shape of the moon, and the other about the spherical shape of the heaven of the fixed stars and its uniform circular motion. The first example is in a way already formulated by al-Fārābī in the *Book of Demonstration*. As I summarized above, we demonstrate *that* the moon has a spherical shape from the phases of the moon and then in return, we demonstrate *why* the moon has those particular phases from the fact that it has a spherical shape. It is reasonable to assume that observational astronomy supplies us with the knowledge *that* the moon has its particular phases in the course of a lunar month. It also seems reasonable that this fact is taken as a principle of instruction by astronomy. Then using this fact, astronomy infers that the moon has a spherical shape.²¹³ Using this newly discovered fact astronomy showed we can demonstrate *why* the fact we initially observed holds, i.e., *why* the moon displays the particular phases it does. Now, perhaps we can assume that natural science takes the fact that the moon has a spherical shape as a principle of instruction from astronomy. I do not know exactly what natural science would infer using this fact; perhaps the fact that the moon has a perfect spherical shape can be used to demonstrate that it is made of an element different from the four elements we find in the sublunar world. In any case, al-Fārābī asserts that the mathematician demonstrates *why* the moon has a spherical shape in respect of its shape or formal cause while the natural scientist demonstrates *why* it has that shape in respect of the other three causes. The mathematician (here more specifically an astronomer) would probably simply use the definition of a sphere: the moon has a spherical shape *because* all the points on its surface are equidistant from one point, sc., its center. I do not know exactly how al-Fārābī thinks the natural scientist would proceed, but perhaps he would argue that the moon has a spherical shape *because* it is made of this fifth kind of element, and anything made of this element has a spherical shape. This would be an answer to this ‘*why*’ question using a material cause. Perhaps the natural scientist, with the help of metaphysics, would argue that the moon has a spherical shape because its sustaining cause, its separate intellect, is perfect and anything caused by a perfect cause has the perfect shape which is a sphere (an efficient cause explanation), and the moon aims to attain the perfection of its cause of being and it can only do so, as a corporeal thing, by having the

²¹³ I am oversimplifying the reasoning here. The full reasoning would probably also involve optics, some other astronomical facts, and the use of some additional commonsensical assumptions like the assumption that the moon produces light or reflects light ‘regularly’ in the sense we should not imagine the moon like a dark rectangular screen onto which the phases of the moon are projected, as in this imaginary case, the shape of the figures projected onto the screen would be independent from the shape of the screen itself.

perfect shape and moving by the perfect motion (spherical and circular respectively) (a final cause explanation). In any case, when we supply the material, final, and efficient cause explanations of why the moon has a spherical shape, we can provide the remoter causes of why the moon has its phases more completely. Recall that we assumed that the moon has its phases is a principle of astronomy. In this way, natural science would demonstrate (indirectly) the ‘*why*’ of a principle of astronomy (i.e., natural science demonstrates *why* the moon is spherical, and that the moon is spherical explains *why* the moon has its phases (see Section 3 above for the details of how this demonstration is conceived by al-Fārābī following Aristotle), so natural science indirectly demonstrates *why* the moon has its phases).

The second example I want to spell out is about the spherical shape and the uniform circular motion of the sphere of the fixed stars. For the sake of simplicity, let’s assume that observational astronomy supplies us with the knowledge that the fixed stars preserve their relative positions as each moves on an arc in the night sky and that they are equidistant from us (assuming that the radius of the earth is negligible).²¹⁴ It seems reasonable to assume that astronomy would take these two facts as principles. Then, the astronomer would infer from these facts (and other relevant premises) that the fixed stars are on a solid spherical heaven and this heaven rotates with a uniform circular motion with a period of (approximately) 24 hours. Once the astronomer demonstrates this, he can go back and use this to demonstrate *why* the two facts it took as principles from observational astronomy hold. The astronomer just demonstrated the shape of the heaven of the fixed stars and the kinematic features of its motion (i.e., that it rotates upon this axis with a uniform circular motion with a period of 24 hours). The astronomer can demonstrate why the heaven of the fixed stars have the spherical shape (because the points on its surface are all simultaneously equidistant from its center) and why it rotates upon this axis with a uniform circular motion with a period of 24 hours (because the following holds: take any point on the surface of the heaven; find the plane which contains this point and is perpendicular to the axis of rotation of the heaven; now let’s focus on the circle we get as a result of the intersection of this plane with the surface of the heavenly sphere; the point we chose always moves on this circle. The ratio of the angle of the arc it covers on this circle at a time interval t to four right angles is

²¹⁴ Observational astronomy would probably just record the positions of the fixed stars in certain time intervals and these two assumptions would probably be inferred using optics and some other assumptions (in particular, to infer the second assumption that the fixed stars are equidistant from us).

equal to the ratio of this time interval t to 24 hours). So, the astronomer can demonstrate *why* the heaven of the fixed stars have the spherical shape and it rotates upon this axis with a uniform circular motion with a period of 24 hours with regard to formal causes. It seems reasonable to assume that the natural scientist, in turn, would take these two facts demonstrated in astronomy as its principles, namely that the heaven of the fixed stars has the spherical shape and that it has a uniform circular motion with the period of 24 hours. Then the natural scientist can demonstrate why these facts hold with regard to the material, efficient, and final causes. The natural science explanations for the spherical shape of the heaven of the fixed stars will be similar to the natural science explanations for the spherical shape of the moon. So, I will not repeat those. As for the motion of this heaven, the natural scientist might argue that it has that motion because it is made of the fifth element and anything that is made of the fifth element has uniform circular motion (material cause). The natural scientist would also demonstrate that anything that is moved has a mover, and that the heaven of the fixed stars also has a mover. As I will explain it in greater detail below, Aristotle thinks that there are only movers of the heavens which are immaterial substances, while al-Fārābī thinks that the mover of a heaven is its intellect subsisting in its substrate in *SM* and apparently also in *MF* and this is different from the separate intellect which does not subsist in any substrate at all and is the cause of being for the heaven. So, in al-Fārābī's mature metaphysical works,²¹⁵ the mover of a heaven is different from the separate intellect of this heaven; the separate intellect of this heaven is the sustaining cause of the being of this heaven (which I take to mean that it is the reason why this heaven exists with all its essential features like its matter and its forms and all the *per se* attributes entailed by these). So al-Fārābī's natural scientist might argue, with the help of metaphysics, that, e.g., the heaven of the fixed stars has its uniform circular motion because the mover of this heaven moves it by intellectually grasping its essence, the separate intellect of this heaven, and the first, i.e., God, and since the first is perfect to the highest degree, and the separate intellects of the heavens come after it in perfection, and since uniform circular motion is the perfect kind of motion, from these the natural scientist might generate efficient cause and final cause explanations for why the heaven

²¹⁵ See Footnote n.24 above for what I mean by his "mature" metaphysical views.

of the fixed stars moves with a uniform circular motion similar to the efficient cause and final cause explanations for why the moon has a spherical shape as I sketched out above.²¹⁶

I admit that several details in these examples are sketchy and conjectural. As I said before, my purpose was just to illustrate *what kind of* examples al-Fārābī would give if he was pressed rather than *exactly what* examples he would give if he was pressed. In any case, the examples I spelled out give answers to the two questions about the relation between mathematics and natural science I posed above. In these two examples, we saw how astronomy can demonstrate *that* a proposition holds, and then natural science can use this proposition as a principle of instruction; in turn, natural science can proceed to demonstrate *why* this proposition holds. In doing so, astronomy can demonstrate *why* this proposition holds in one respect (namely in terms of the formal cause), while natural science can demonstrate more fully *why* it holds (in terms of the other kinds of causes). In my examples, I also showed how natural science can demonstrate the ‘*why*’ of a principle of instruction of astronomy; recall that not all principles of astronomy are taken from the ‘pure’ mathematical science of geometry. The proper principles of astronomy are likely to be taken from observational astronomy. So, I proposed that the fact that the moon has the particular phases that it has is a principle of instruction in astronomy taken from observational astronomy. When natural science demonstrates more fully than astronomy why the moon has a spherical shape, it also demonstrates indirectly but more fully why the moon has its phases. That said, perhaps al-Fārābī would think that there would be another way in which natural science *directly* demonstrates some principles of the mathematical sciences, and perhaps this is not limited to the ‘applied’ mathematical sciences either. What I mean is that perhaps al-Fārābī would conceive of Aristotle’s arguments in the *Physics* that actual infinity is not possible but that only potential infinity is (by division, and by addition, at least in thought) as something the natural scientist *demonstrates* (not merely defends dialectically); if so, perhaps al-Fārābī

²¹⁶ Not in so many words, but al-Fārābī asserts in *MF* Ch.7 6 that the heavenly bodies have the most honorable (*ashraf*) and most excellent (*afḍal*) features of the material things; among these features, he mentions that they have the most excellent shape, i.e., the sphere, and they have the most excellent motion, which is the circular motion. As explained below, Al-Fārābī states above in *MF* that the first is the direct cause of the separate intellect which is the cause of being for the first heaven and the first is the indirect cause of everything else in the universe, and things are ordered in perfection as they are ranked in their causal order with respect to the first. So, it is strongly implied that the fact that heavenly bodies, among the material things, have the most excellent features is due to the fact that the heavenly bodies have more perfect causes (i.e., the immaterial things) while the other material things in the sublunar world have the heavenly bodies as their causes and the heavenly bodies themselves are less perfect than their own causes.

would think that why the ‘construction’ postulates of geometry (i.e. Postulates 1-3 in the *Elements*) hold are demonstrated by the natural scientist.

It took me a relatively long detour to discuss the entry from mathematics into natural science,²¹⁷ but the payoff of this discussion for my current purpose of clarifying the subject-matter of metaphysics in al-Fārābī will become clearer when we discuss the entry from natural science into metaphysics.²¹⁸ Let me turn back to the account of natural science in the *Attainment*. Al-Fārābī states in E15, A13 that *most (jull)* of the principles of instruction in natural science are different from the principles of being in it,²¹⁹ then he states in the following sentence that *all* of the principles of instruction are different from and posterior in being to the principles of being in the genera studied by natural sciences. In short, the principles of instruction in natural science (most or all) are not principles of being in the genera studied by the natural science. So, we proceed in the way al-Fārābī describes above. Starting from the principles of instruction, in each step (where, say, X is at issue) we first demonstrate the ‘*that*’ of the cause of X, say Y, and then from Y, we demonstrate the ‘*why*’ of X, as well as the ‘*that*’ and ‘*why*’ of other effects of Y that were not known to us prior. In this way, we climb up to the highest causes in the genera studied by natural science. It turns out that there are two kinds of highest causes in the genera studied by

²¹⁷ So far, I only talked about the passage from astronomy into natural science and the cooperation between them, but presumably similar observations can also be made about other ‘applied’ mathematical sciences (like optics, mechanics etc.) and natural science.

²¹⁸ As I noted above, mathematics is not covered in al-Fārābī’s *Philosophy of Aristotle*. In the *Philosophy of Aristotle*, after logic (4-16), he starts to review natural science in 17. He starts to do so by explaining that among the principles of natural science, first to be mentioned are that there are many things and that they are in change (and change depends on multiplicity of attributes). He points out that perception attests to multiplicity first distinguishing things in different places, and then distinguishing different perceptible qualities in the same thing. Perception also attests to the fact that many of these things grasped by perception are in change. Also, thought (‘*aql*’) distinguishes the multiplicity in a thing by distinguishing the substance from its accidents according to a series of questions that introduce the categories (*what (mā)*, *how much (kam)*, *how (kayfa)* etc.). So, in a way, the principle of natural science that there are multiple things is informed by logic, or more specifically, by the *Categories*. After explaining the principles that there are many things and that there is change (which depends on the first) in 17-18, in 19 al-Fārābī spells out the monist challenges to these principles (it seems that he spells out these challenges from *Phys.* I.8 191a23-33), and al-Fārābī says that Aristotle refutes these challenges (which Aristotle takes himself to do in *Phys.* I.2-3, and I.8). After this, al-Fārābī goes on review the major topics discussed in the rest of Aristotle’s *Physics*. Interestingly, he suggests in the *Philosophy of Aristotle* 20 that Aristotle’s investigations in natural science bring together dialectic and certain knowledge (*al-‘ilm al-yaqīn*), while in the *Attainment* and in the *Book of Demonstration*, al-Fārābī implies that a science like natural science consists of certain knowledge only.

²¹⁹ The Hyderabad text that Mahdi follows without proposing an emendation has “ومبادئ التعليم في جل ما يحتوي عليه هذا” while the text Āl-Yāsīn prints does not have the underlined غير, and he does not report this variance in the apparatus either. In any case, it is clear from the following passage that the reading of the Hyderabad text (or something that gives that sense) is correct whether it reflects some ms. reading or an emendation of the printer of the Hyderabad text.

natural science, and these are also our entry points into metaphysics. The first is the heavenly bodies and the second is the intellect. Al-Fārābī asserts in E16, A14 that when we arrive at the heavenly bodies in this way, and investigate their causes, we would need to look for things which are neither bodies nor in bodies; these are not natural but have a more perfect being than natural things. We are stepping into another science here which investigates “the beings which are after natural [beings] [*ba‘da al-ṭabī‘iyyāt*].” Here, the investigator finds himself “in the middle of two sciences: natural science, and the science of what is after natural [beings] [*‘ilm mā ba‘da al-ṭabī‘iyyāt*], [i.e., metaphysics, and these things are after natural beings] in the order of investigation and instruction and is above [*fawqa*] natural [beings] in the order of being” (136 line 15 – 137 line 3). In other words, these causes studied by metaphysics come after the natural things in the order of instruction as their *‘that’* is demonstrated in natural science, but they are above natural things in the order of being because these are the real causes of all the natural things (immediately of the heavenly bodies, and through them, all the sublunar things, as we will see).

There are two prominent candidates for the non-natural causes of the heavenly bodies. The first is their movers. The second is the sustaining causes of the heavenly bodies, i.e., the causes by virtue of which the heavenly bodies exist as they are (i.e., with their nature and all the *per se* attributes entailed by their nature).²²⁰ According to Aristotle’s account in *Met.* Lambda, carrying on the discussion from *Phys.* VIII, the movers of the heavenly bodies are the intellects which are pure actualities and are separate, i.e., they self-subsist and do not have a material substrate. Metaphysics (and the theology part in particular) studies these. Apart from these movers of the heavens, Aristotle does not mention any other causes of the heavens outside the heavens (i.e., other than their form and matter). The *Philosophy of Aristotle* also holds that metaphysics studies the mover of the heavens (34). Also later in the *Philosophy of Aristotle*, al-Fārābī says that we should investigate whether the heavenly bodies have “a nature or a soul or an intellect or something else more perfect than these, but these things are outside the natural investigation [*al-naẓar al-ṭabī‘ī*]” and he ends up implying that metaphysics studies only “the Active Intellect and the thing which gives the heavenly bodies [their] permanent circular motion” (99, p.130 lines 9-

²²⁰ It is not my purpose here to present a comprehensive discussion of al-Fārābī’s cosmology. For a comprehensive discussion of al-Fārābī’s cosmology, see Damien Janos, *Method, Structure, and Development in al-Fārābī’s Cosmology* (Leiden: Brill, 2012).

14; more on the Active Intellect, see below). The singular mover in both passages in the *Philosophy of Aristotle* seems to refer in particular to the mover of the outermost heaven, i.e., in Aristotle's system, the heaven of the fixed stars. After all, the mover of the outermost heaven is the *first* unmoved mover, i.e., the ultimate principle in reality, according to Aristotle, and it would make sense for al-Fārābī to emphasize it, but I do not see any strong reason to assume that al-Fārābī's account in the *Philosophy of Aristotle* meant to leave out the movers of the other heavens as non-natural things also studied by metaphysics.²²¹

In *SM*, al-Fārābī asserts that there are six principles by which bodies and their accidents subsist: the first (i.e., God), the seconds (*al-thawānī*) (i.e., the separate intellects which are the causes of being for the heavenly bodies), the Active Intellect, the soul, the form, and the matter. Of these, the first three are neither bodies nor in bodies, while the latter three are in bodies (although the latter three are not themselves bodies either) (31). The substance of each heaven is constituted out of a substrate (*mawḍūʿ*) and a soul (*naḥs*) (53 lines 7-8). Although not specified here by al-Fārābī, the substrate of a heaven should be the fifth kind of element that Aristotle describes in *DC*. The soul of a heavenly body is “different in kind [*mubāyina... fī al-nawʿ*]” from the souls of the living things in the sublunar world. More specifically, heavenly bodies “move in circles from [their souls] [*anhā*].” The heavenly bodies do not have perceptive (*ḥassāsa*) or imaginative (*mutakhayyila*) souls but only intellect, and their souls intellectually grasp (*taʿqilu*) their objects (*maʿqūlāt*) always in actuality. The objects of the intellection of the soul of a heavenly body are “intellectually grasped [*maʿqūla*] by their substance, and these are the substances which are separate from matter” (33 line 18- 34 line 9). Each heavenly body also has a second, i.e., a separate intellect which is its cause of being. The soul of a heavenly body intellectually grasps three things: itself or its essence (*dhātahā*), the second which is the cause of being for this heavenly body, and the first (i.e., God) (34 lines 9-10, 53 lines 8-10). Although it is not explicitly developed here, it seems that the fact that the soul of a heavenly body intellects itself, its second, and the first should have a causal role in the movement of this heavenly body. Each second

²²¹ For example, see *Philosophy of Aristotle* 33: in the investigation of the heavenly bodies, the natural scientist finally “investigates the *principles* [*mabādi*] which move the bodies which have circular motion by nature, [and he investigates] whether they are bodies or not and whether they are non-corporeal essences [*dhawāt*] without being in matter or in a body” (my emphasis). That said, in the following section cited above, al-Fārābī answers these questions by referring to “that which [*alladhī*, singular]” gives motion to the heavenly bodies; nonetheless, as I suggested above, this seems to be for the purpose of emphasizing the first unmoved mover, without implying that there is only a single such unmoved mover.

associated with a heavenly body is the cause of being for this heavenly body (*sabab wujūdihi*) and from this second the substance of the heavenly body obtains (*ḥaṣala ‘anhu*); the seconds of the heavenly bodies are ranked according to the rank of their heavenly bodies (i.e., the highest being the second of the first heaven (*al-samā’ al-ūlā*)²²² and the lowest being the second of the sphere of the moon) (31 line 13 - 32 line 4).

Just as the second of a heaven is its cause of being from which the substance of this heaven (i.e., its soul in its substrate) obtains, the first, i.e., God, is the *proximate* cause of being for all the seconds, and the Active Intellect (32 lines 12-3), while it is the remote cause of being for everything else in reality. Also, just as the soul of a heaven intellectually grasps its essence, its second, and the first, each second intellectually grasps itself or its essence (*dhātahu*) and the first, and the Active Intellect intellectually grasps itself or its essence, all the seconds, and the first. By contrast, the first intellectually grasps only itself or its essence, but since it is the cause of everything else, through its own essence, it also grasps everything else (34 lines 13-6). In *SM*, al-Fārābī does not comment on the causal roles of these immaterial things’ intellectually grasping themselves or something else, but since it seems that the only internal acts of these immaterial things are to intellectually grasp themselves or something else, these intellectual acts presumably play roles in explaining their causal connections (i.e., how they cause what they cause or how their own causes maintain their effects on them).

It goes without saying that the first does not need anything else as a cause of being for the things that it directly causes, which are, in *SM*, the seconds and the Active Intellect. Likewise, each second does not need anything else to cause the being of its heavenly body (52 lines 6-8). That said, apart from such negative descriptions of what it means for the first to be the cause of being for the seconds and the Active Intellect, or a second to be the cause of being for its heavenly body, al-Fārābī does not say much to describe *positively* what it means for something to be a cause of being in these cases. Nonetheless, we can make some reasonable conjectures about what

²²² The first heaven is outside the heaven of the fixed stars (*al-kawākib al-thābita*); it seems that al-Fārābī has the first heaven in addition to the heaven of the fixed stars in the sort of Ptolemaic system that he uses to account for the precession of the fixed stars in addition to their daily motion. Al-Fārābī takes the first heaven to have a uniform circular motion with a period of around 24 hours (see *MF* Ch.7 1, 11); in that case, the heaven of the fixed stars inside it with an inclined axis should have uniform circular motion with a much longer period (ancient astronomers calculated it to be about one degree in a century). I am indebted to Argyro Lithari for giving me a quick primer on what the precessional motion of the fixed stars is, the history of the discovery of the precession of the fixed stars, and how the ancient astronomical theories dealt with this phenomenon.

al-Fārābī might mean when, e.g., he says that a second is the cause of being for a heavenly body or that the substance of this heavenly body (i.e., its soul in its substrate) obtains by this second. First of all, we are clearly not talking about the cause of the motion of the heavenly body: its soul is the cause of its motion and its second is the cause of its motion only indirectly in that the second is the cause of the fact that its substance obtains, i.e., it exists with its soul in its substrate. The second cannot be the cause of the generation of the heavenly body in the sense that my father, and my mother in another way, are the causes of my generation, because the heavenly bodies are eternal. That said, even the eternal things can have sustaining causes, i.e., the causes of their subsistence (*kiwām*). By the sustaining cause of X or the cause of its subsistence, I do not mean specifically something which fends off the external factors from destroying X. I mean more generally whatever is responsible for the continued existence of X as what it is such that if its sustaining cause did not exist, X would not exist as what it is either. So, the heavenly body persists as a substance with its soul in its substrate *because* of its second, and this means, minimally, that the following counterfactual holds: were the second not to exist, the heavenly body would not persist as a substance with its soul in its substrate. Such a counterfactual consideration seems to be relevant when we consider something that contains structural complexity because it seems that when we say that A and B constitute one thing as opposed to being merely a heap of A and B, we invite the question of on account of what it is the case that A and B constitute one thing but that we do not have merely a heap of A and B. To put it simply, according to *Met.* H.6 1045a24-33, in the case of the question of why the form-matter composite is one thing and not a heap, Aristotle's answer seems to be that ultimately there is no further cause to explain the unity of the form and the matter other than saying that the form is the actuality of which the matter is the potentiality unless by the cause of the form-matter composite, we mean the efficient cause of the generation of the substance which is this form-matter composite. If we talk about eternal beings, like the heavenly bodies, it seems that for Aristotle there is no further answer to the question of what is the cause of the unity of this form-matter composite other than merely saying that its form is the actuality of which its matter is the potentiality, or perhaps the heavenly bodies should not be considered to be form-matter composites at all because it seems that the only matter they have is the matter for locomotion,²²³ and perhaps having matter for substantial change is necessary for something to be considered to

²²³ See, for example, *Met.* H.4 1044b6-8, Λ.2 1069b24-6, and Λ.7 1072b4-10.

be a form-matter composite in the way *Met. H* talks about such composites (in either case, since the heavenly bodies locomote, the inquiry into the cause of their locomotion will be a meaningful scientific inquiry from Aristotle's perspective).

By contrast, al-Fārābī seems to think that everything which has structural complexity requires a cause different from it and explaining its complexity: this includes the complexity of a form-matter composite that an eternal heavenly body has as it is composed of a soul in a substrate, but the relevant sort of structural complexity does not seem to be restricted to the structural complexity of a form-matter composite. We find an indication of al-Fārābī's commitment to the thesis that any structural complexity in something requires a cause different from it to explain its complexity, and in particular, if this complexity is in its substance, then this thing would need a cause of being, i.e., the cause which explains why the components of the substance of this thing are not a heap but form genuinely one thing, in his arguments in *MF* Chapter 1 and Chapter 2 explaining the attributes of the first and how it causes the being of other things; these arguments employ directly or indirectly the principle that the first must be perfect and simple because otherwise there would be something causally prior to it and this would contradict its being the first.²²⁴ In these arguments, al-Fārābī considers various sorts of structural complexity the first might have (he considers the form-matter but more generally any kind of division it might have in its substance) and in each case he infers that such a structural complexity would contradict the first's being a first, i.e., that there is nothing causally prior to it. As I will discuss the context of this passage in greater detail below, al-Fārābī argues in *Risāla fī al-'Aql* (*Treatise on the Intellect*)²²⁵ that the cause of the first heaven has two natures (*ṭabī'atān*) each of which is responsible for one of its essential activities and for this reason, the cause of the first heaven "is constituted as a substance only by two natures by which it exists [*bihimā wujūduhu*];" from this, al-Fārābī infers that the cause of the first heaven must itself have a principle "because what is divided has a cause of that by which it is constituted as a substance"²²⁶ (35.3-4). So, when

²²⁴ For a clear and insightful analysis of these complex arguments, see Menn, *Al-Farabi's Metaphysics* Section 4.

²²⁵ I also consulted the English translation of this work by McGinnis and Reisman in their *Classical Arabic Philosophy: An Anthology of Sources*, 68-78. This discussion came to my attention in this context through Menn, *Al-Farabi's Metaphysics* n.62.

²²⁶ *إذ كان ما ينقسم له هو السبب فيما يتجوهر به* where the printed text has إليه instead of the underlined له which is my emendation. The printed text can be translated as "because that into which it is divided is the cause for that by which it is constituted as a substance;" in other words, these two natures which together constitute the substance of the cause of the first heaven would be causes of the first heaven. It is true that al-Fārābī thinks in a broadly Aristotelian fashion that when we have something composite, its components are its causes but in what follows in this passage

something has multiplicity in its essence or substance, that thing must have a cause different from it which is the cause of being for it.

As I will say more about this below, al-Fārābī argues in *SM* that any of the seconds or the Active Intellect does not have splendor and adornment of being (*bahā' al-wujūd wa-zīnatuhu*) due to intellectually grasping its essence alone, but in addition to this it also needs to intellectually grasp “some other being which is more perfect and more splendid [*abhā*] than it,” i.e., the first. “So,” he says, “in this respect there is multiplicity in the essence of each of them [sc., the seconds and the Active Intellect] since whenever [each of these] intellectually grasps something, its essence becomes that thing in some respect though [its essence] has an essence proper to itself along with this [*lahā ma'a dhālika dhātan takhuṣṣuhā*]; so it is as if the excellence [*faḍīla*] of its essence is not complete except by the cooperation [*ta'āwun*] of a multiplicity, and for this reason the multiplicity in that by which the thing is constituted as a substance [*fī-mā yatajawharu bihi al-shay'*] is a deficiency [*naqṣan*] in the being of that thing” (40 lines 6-11). In other words, if something intellectually grasps two different object, it has two different acts of intellectually grasping (‘*aql*’) and since each of the seconds or the Active Intellect is nothing but an actual intellect, it has multiplicity in its essence insofar as its essence consists of two distinct acts of intellectually grasping. By contrast, the first intellectually grasps only itself and hence is free from this sort of structural complexity.

With some light being shed on what al-Fārābī means when he talks about the cause of being for something, let me go back to our present question: as I explained above, al-Fārābī thinks that one point of entry from natural science into metaphysics is through the causes of the heavenly bodies and we are trying to get clearer on what sort of causes of the heavenly bodies are unnatural and hence are studied by metaphysics and no longer by natural science. As I pointed out above, it seems that, following Aristotle, al-Fārābī identifies such causes with the movers of the heavens in the *Philosophy of Aristotle*. I explained so far that there are two different causes of each heaven in *SM*: its soul, which is the cause of its circular motion, and the second for this heaven, which is the cause of being for this heaven. Even though, as I stated above, al-Fārābī emphasizes that the souls of the heavens are different from the souls in the sublunar world because they are

from *On the Intellect*, al-Fārābī goes on to argue that the first is the principle of the cause of the first heaven, not that the two natures which constitute the substance of the cause of the first heaven are both the principles of the cause of the first heaven. So, with the emendation I propose, the quoted clause makes better sense in its context.

just intellects (without perception and imagination), it seems that they would still be studied by natural science albeit liminally; after all, the heavenly bodies have material substrates, even though their material substrates are different from the material substrates in the sublunar world, their souls subsist in such material substrates. By contrast, the seconds and the Active Intellect do not subsist in any material substrate at all. So, the heavenly bodies are natural substances, and their souls are the souls of natural substances despite all the differences between the heavenly bodies and the sublunar natural substances and between the souls of the heavenly bodies and the souls of the living beings in the sublunar world. By contrast, the seconds and the Active Intellect are not natural substances at all. So, it seems that according to the picture in *SM*, only the Active Intellect, the seconds, and the first are studied in the theology part of metaphysics, properly speaking.

The account in *MF* is also similar though with interesting differences. One important difference between the *SM* account of the immaterial substances studied in theology (the Active Intellect, the seconds, the first) and the account in *MF* is that in *MF* al-Fārābī is more forthcoming about the causal order within these immaterial substances. At the beginning of this order, we have the first. Then we have the seconds ranked according to the order of the nine heavenly spheres: the first heaven, the heaven of the fixed stars, the heaven of Saturn etc. all the way down to the heaven of the moon. Finally, we have the Active Intellect. The first is the cause of everything else in reality and they proceed from the first in an order and this causal order also shows their decreasing level of perfection with the first having the complete perfection (*MF* Ch.2, 2). But the first is the *direct* cause of only the first second which is cause of being for the first heaven (*al-samā' al-awwal*). The second has two essential acts; it intellectually grasps the first, and it intellectually grasps its own essence. From its intellectually grasping its essence, the being of the first heaven proceeds (*yalzamu 'anhu*) and from its intellectually grasping the first, the second second proceeds, i.e., the separate intellect which is the cause of being for the second heaven which is the heaven of the fixed stars. Similarly, the second second also has two essential acts; insofar as it intellectually grasps its own essence, the being of the heaven of the fixed stars proceeds from this act, and insofar as it intellectually grasps the first, the third second proceeds from this act. In this way, each second associated with one of the nine heavenly spheres apart from the sphere of the moon which is the last heavenly sphere have two essential acts; it intellectually grasps itself and from this act the being of its associated heavenly sphere proceeds,

and it also intellectually grasps the first and from this act the next second proceeds. When we come to the second associated with the last heaven, i.e., the heaven of the moon, we also have two essential acts. From this last second's intellectually grasping its essence, the being of the sphere of the moon proceeds; from this last second's intellectually grasping the first, another second does not proceed but rather the Active Intellect proceeds. The Active Intellect also intellectually grasps its own essence and the first, but no immaterial substance or a further heaven proceeds from these acts of the Active Intellect (*MF* Ch.3 1-10).

It is worth flagging the significant differences between the comparable pictures in *SM* and *MF* summarized above. First, in *SM*, the first is the direct cause of being for all the seconds and the Active Intellect whereas in *MF* we have a more gradual emanation where the first is the direct cause of only the first second, the first second of the second second and so on until we reach the Active Intellect. Moreover, it is stated in *SM* that the Active Intellect intellectually grasps its essence, all the seconds, and the first, whereas in *MF*, similar to the seconds which are higher in the cosmological rank, the Active Intellect intellectually grasps its essence and the first, not also all the seconds as we have it in *SM*. I am not sure what is theoretically at stake between these two views about what the Active Intellect intellectually grasps, but it might be down to al-Fārābī's interest in streamlining his cosmological picture in *MF*. Or alternatively, as explained below, al-Fārābī argues in *On the Intellect* that the activity of the Active Intellect is conditioned by the activities of the heavenly bodies, and hence by the activities of the seconds, but not the other way around; so al-Fārābī might have thought that all the seconds as a whole have direct causal effects on the Active Intellect and that this causal relation should be reflected in what the Active Intellect intellectually grasps, i.e., that all the things that have direct causal effects on the Active Intellect are intellectually grasped by the Active Intellect. Finally, as I mentioned also above, in the *MF* account, we have clear statement of the relation between the intellectual acts of the seconds and their causal effects while these are not put explicitly in the *SM* account.

The rest of the relevant aspects of the account of the immaterial substances in *MF* is similar to the corresponding account in *SM* summarized above. The heavenly bodies resemble the sublunar things in that the heavenly bodies have a substrate (*mawḍūʿ*) which resembles the matters in the sublunar substances, and the heavenly bodies have "things which are like forms by which they are constituted as substances [*tatajawharu bihā*]" with these quasi-forms subsisting in their

substrates. But these forms or quasi-forms of the heavenly bodies are different from the forms in the sublunar world because the forms of the heavenly bodies do not have any contraries and since these forms do not contain any privations (‘*adam*’) nor do their substrates contain any privation, these forms are not prevented from intellectually thinking, and hence these forms are “intellects by their essence [‘*uqūlan bi-dhawātihā*’]” (*MF* Ch. 7, 3). Similar to al-Fārābī’s corresponding claim in *SM*, this quasi-form of a heavenly body which is an intellect intellectually grasps its essence, the second which is the cause of being for this heavenly body, and the first (*MF* Ch. 7, 4-5). Al-Fārābī does not say explicitly in *MF* that the forms of the heavenly bodies which are the intellects subsisting in their substrates are the causes of the motion of the heavenly bodies, but given the strong similarity between the accounts in *SM* and *MF*, there does not seem to be any overriding reason to assume otherwise. So, as I argued above, it seems that the forms or quasi-forms of the heavenly bodies which are the causes of their motions would be studied by natural science while the seconds which are the causes of being for the heavenly bodies would be studied by the theology part of metaphysics.

As I tried to show so far, in the *Philosophy of Aristotle*, al-Fārābī only talks about the mover of the heavens among the causes of the heavenly bodies. In *SM*, the seconds, i.e., the separate intellects, are the causes of being for the heavenly bodies and the soul of each heavenly body, which is an intellect subsisting in the substrate of that heavenly body, is responsible for the circular motion of that heavenly body. I also argued that in *MF* we seem to have the same picture about the seconds and the movers of the heavenly bodies. It appears at first sight that al-Fārābī’s account of the causes of the heavens in *On the Intellect* make the causes of being for the heavens also their movers, combining the two intellects into one:

T13 *On the Intellect* 34.4-35.3

[1] وكل جسم سمائي فإنه إنما يتحرك عن محرك ليس بجسم ولا في جسم أصلاً فإنه هو السبب في وجوده فيما يتجوهر به [2] فمرتبه في الوجود الذي هو جوهره مرتبة ذلك الجسم فمحرك أكملها هو أكملها وجوداً وأكملها وجوداً هو السماء الأولى فأكملها وجوداً هو محرك السماء الأولى [3] غير أن محرك السماء الأولى لما كان مبدأ [به]²²⁷ وجود شيتين متباينين أحدهما ما يتجوهر به السماء الأولى وهو جوهر جسماني أو متجسم والشئ الآخر هو محرك فلك الكواكب الثابتة وذلك ذات لا جسم ولا في جسم [4] فليس يمكن أن يعطي الأمرين جميعاً بجهة واحدة

²²⁷ I excise this به on Husayn Ibrahim’s recommendation.

وأمر واحد في ذاته مما به تجوهره بل بطبيعتين أحدهما أكمل من الأخرى إذ كان التي بها أُعطي الشيء الأكمل الذي ليس بجسم ولا في جسم أكمل من التي أعطي بها ما هو جسماني وهو الأنقص فهو إذن إنما يتجوهر بطبيعتين بهما وجوده

[1] Each heavenly body is moved only by a mover which is not a body nor in a body at all for it is the cause of [this heavenly body's] being regarding that by which [the heavenly body] is constituted as a substance [*yatajawharu*]. [2] [The mover's] rank in respect of the being [*wujūd*] which is its substance is the rank of that [heavenly] body; so, the mover of the most perfect [heavenly body] is the most perfect in being and the most perfect [heavenly body] in being is the first heaven. So, the most perfect [mover of a heaven] in being is the mover of the first heaven. [3] That said, since the mover of the first heaven is a principle for the existence of two distinct things where one of them is that by which the first heaven is constituted as a substance, which is a corporeal or a corporealized substance [*jawhar jismānī aw mutajassim*], and the other thing is the mover of the heavenly sphere [*falak*] of the fixed stars, which is an essence that is not a body nor in a body, [4] it is not possible for it to provide these two things together in one respect [*bi-jiha wāḥida*], and by one thing in its essence from that by which it is constituted as a substance, but by two natures, one of which is more perfect than the other since [the nature] by which the more perfect thing which is neither a body nor in a body is provided is more perfect than [the nature] by which what is corporeal and the more deficient is provided; therefore it is constituted as a substance only by two natures by which it exists.

We are told in (1) that the mover (*muḥarrik*) of a heavenly body is neither a body nor in a body and it is the cause of being for this heavenly body. Recall that in *SM* and also apparently in *MF*, the separate intellect which is the cause of being for a heaven is not a body nor does it subsist in a body, but the soul or the quasi-form of the heavenly body, another intellect, which is the cause of its circular motion, subsists in a body, more precisely, in the substrate of this heavenly body. So, in (1) al-Fārābī talks about the separate intellect which is the cause of being for a heaven but calls it the mover of that heaven. There is no mention of a second intellect subsisting in the substrate of the heavenly body and is the cause of the circular motion of this heaven in the surrounding passage in *On the Intellect*. When al-Fārābī specifies the causal activities of the mover of the first heaven in (3), (and the argument in (3)-(4) is supposed to apply to the movers

of all the heavens even though it is explicitly formulated for the mover of the first heaven), he mentions only two causal activities: one is producing the first heaven, the other is producing the mover of the next heaven, i.e., the heaven of the fixed stars. In other words, we have a picture we saw in *MF*: the second of the first heaven, for example, has two causal activities: it produces the first heaven, and it produces the second of the heaven of the fixed stars. In T13, there is no mention of the “mover” of the first heaven having the causal activity of *moving* the first heaven. This suggests that the “mover” of the first heaven is not directly responsible for the circular motion of the first heaven and that it is rather the cause of being for the first heaven, i.e., for the first heaven to subsist with its particular nature (with its form subsisting in its substrate). If the parallel accounts in *MF* and *SM* are also taken into consideration, it seems also in *On the Intellect* account that not the “mover” of the first heaven but the nature of the first heaven, or more specifically its form (or quasi-form) or its soul which has only the intellective power, is *directly* responsible for the circular motion of the first heaven. In other words, although not explicitly put so, the most likely interpretation of the account in *On the Intellect* suggests that this account agrees, in particular, with the account of *MF* in that the cause of being for a heaven (which is misleadingly called its “mover” in *On the Intellect*) is *directly* responsible only for the being of this heaven and the being of the cause of being for the next heaven; it is only *indirectly* responsible for the circular motion of this heaven by being responsible for this heaven’s existence as a substance with its particular nature (with its form subsisting in its substrate) and this nature or form or the intellective soul is directly responsible for the motion of this heaven.²²⁸

²²⁸ Thābit b. Qurra presents a related argument in the reverse direction in his *Concise Exposition of Aristotle’s Metaphysics* (“Thābit ibn Qurra’s Concise Exposition of Aristotle’s Metaphysics: Text, Translation, and Commentary,” in *Thābit ibn Qurra: Science and Philosophy in Ninth-Century Baghdad*, ed. and trans. David C. Reisman and Amos Bertolacci (Berlin: De Gruyter, 2009), 715–76). As I argued above, al-Fārābī seems to imply in the *On the Intellect* passage under consideration that the cause of being for a heaven is called its mover because it is indirectly responsible for the motion of this heaven through being the cause of the subsistence of its form in its substrate (or something along these lines). Thābit argues in section 2 of Reisman’s and Bertolacci’s edition (737, 739) that the first unmoved mover is the cause of being for the heavenly bodies because the nature of the heavenly bodies subsists in their motions, and so the cause of their motion would also be the cause of the subsistence of their natures. Thābit asserts in this treatise that each corporeal substance “subsists [*qiwām*] only by its nature which is proper to it; its nature proper to it subsists only by its form proper to it; its form proper to it which makes its essence subsist [*al-muqawwima li-dhātihī*] subsists only by the motion proper to it” (737.21–9.1). He goes on to argue that each thing is moved by a desire (*shawq*) and the cause of its motion is the object of its desire (*al-mutashawwaq ilayhi*). Thābit points out that Aristotle argues in the *Physics* that the causes of all the motions go up ultimately to the first unmoved mover; he concludes his argument by saying that “the first mover is the cause of the form which makes subsist the substance of each thing that is in motion by a proper motion; so the subsistence of the substance of each of them does not belong to it from its essence but from the thing which is the first cause of its motion... Therefore, the first mover is the principle and the cause for the being of the forms of all the corporeal substances and

Based on the fact that the “mover” of a heaven is the cause of being for this heaven and also for the cause of being for the next heaven as stated in T13 (3), al-Fārābī infers in (4) that this cause is constituted as a substance by two natures. It has one nature insofar as it produces this heaven; it has the second nature insofar as it produces the cause of being for the next heaven. The heaven is corporeal and the cause of being for the next heaven, i.e., the separate intellect of the next heaven is incorporeal, and al-Fārābī maintains that an incorporeal substance is more perfect than a corporeal substance. Since it is implied in (2) in T13 above that the cause of X is more perfect than the cause of Y if X is more perfect than Y, it follows that the first nature of the “mover” of this heaven from which this heaven obtains is less perfect than the second nature of the “mover” of this heaven from which the “mover” of the next heaven obtains. After this, al-Fārābī argues that the “mover” of the first heaven cannot be the absolute first principle because it has a structural complexity (it subsists through two distinct natures) and, as I quoted above, al-Fārābī asserts in the following passage that anything with such a structural complexity must have a principle other than itself (35.3-6). Finally, similar to the relevant points in *SM* and *MF*, al-Fārābī argues in *On the Intellect* that the “mover” of the first heaven is not material at all and for this reason it is an intellect; he asserts that it intellectually grasps its essence and “the principle of its being”, i.e., the first (35.7-8). As I mentioned above, although al-Fārābī explicitly talks about the “mover” of the first heaven in the passage under consideration, the argument should also be applicable to the “movers” of the remaining heavens. Nonetheless, it is not clear whether this last claim should be interpreted, when it is extended to the “movers” of the remaining heavens, that each of them intellectually grasps the first, which is their ultimate principle (as we have in *SM* and *MF*), or the “mover” of the previous heaven which is its proximate principle. Finally, the following sentence seems to be corrupt but it seems to mean that the “mover” of the first heaven produces the first heaven insofar as it intellectually grasps its essence and it produces the “mover” of the next heaven insofar as it intellectually grasps its own principle, i.e. the first (35.9-11).²²⁹ There is a

for their persistence [*baqā'ihā*] since when we imagine that the being of a natural motion is eliminated [*irtifā'*], and, if you want to put it so, the powers [*al-quwan*] of [*min*] each body possessed by [that body], then certainly its substance would [also] be corrupted” (739.8-17). Thābit repeats this idea further down in section 4: “there is no longer any being or subsistence for a heavenly sphere [*ḥalak*] or the rest of the natural bodies except by the first principle, i.e., the first mover, since the form of each of them is its motion proper to it and its motion proper to it is that which makes its substance subsist such that when [its motion] is eliminated, its being is [also] eliminated [along with it]” (741.20-3).

²²⁹ I find it difficult to make sense of the printed text both by itself and in consideration of its context, so propose to add *وما عقل من طبيعته* after *طبيعته*. I also propose to add a definite article before *طبيعتين*, but this second emendation is not as essential as the first emendation for improving the understandability of the text. So, the text would read as follows

similar ambiguity, when this claim is extended to the “movers” of the other heavens, as to whether the “mover” of a heaven produces the “mover” of the next heaven insofar as it intellectually grasps its proximate principle, i.e., the “mover” of the previous heaven, or insofar as it intellectually grasps its ultimate principle, i.e., the first. In either case, we seem to find in the *On the Intellect* account, just as in *MF*, that the *two causal activities* of the separate intellect of a heaven as the cause of being for this heaven and the cause of being for the separate intellect of the next heaven are closely associated with the *two intellectual activities* of the separate intellect of this heaven.

In short, *SM* clearly states and *MF* likely agrees that the intellects or the quasi-forms subsisting in the heavenly bodies are the causes of the circular motions of the heavenly bodies while the separate intellects are the causes of being for the heavenly bodies. I argued that al-Fārābī would probably consider the former to be still in the realm of natural science while he would consider the latter, along with the first and the Active Intellect, among the immaterial substances studied exclusively in the theology part of metaphysics. I also suggested that the relevant account in *On the Intellect* seems to agree with this view I draw from *SM* and *MF*.

As stated above, al-Fārābī thinks that one way from natural science into metaphysics is through the heavenly bodies, and the other way is through psychology. The highest causes we reach in psychology (as part of natural science) are the intellect and the intelligible. Investigating the causes of the intellect and the intelligible also leads us into something that is not a natural thing. This is the Active Intellect, as he puts it explicitly in the *Philosophy of Aristotle*. Also, al-Fārābī briefly explains in what way the Active Intellect is the cause of the intellect and the intelligible in the *Philosophy of Aristotle* 97: the potential intellect (*bi-l-quwwa*) in the rational animals needs an agent (*fā'il*) to become actual (*bi-l-fi'l*) and this agent is the Active Intellect. Al-Fārābī asserts that we need to grasp first the primary intelligibles (*al-ma'qūlāt al-uwal*) and we use these to

فظاهر أن ما عقل من مبدأ وجوده أكمل طبيعته >وما عقل من< التي تخصه أنقصهما وليس يحتاج في أن تنقسم ذاته إلى <ال>طبيعتين إلى شيء آخر غير هذين من. The emended text can be translated as follows (with my additions for clarification purposes being put in square brackets as usual), and the reader would see that the emended text makes good sense both in itself and in consideration of the surrounding passage: “So it is clear that whatever it [sc. the “mover” of the first heaven] intellectually grasps of the principle of its being [i.e. the first] is the more perfect of its two natures and whatever it intellectually grasps of [its essence] which is proper to it is the more deficient of its two natures and for its essence to be divided into the [mentioned] two natures it does not need anything other than these two [sc. other than what it intellectually grasps of the principle of its being and what it intellectually grasps of its own proper essence].”

grasp other intelligibles; the potential intellect does not have the primary intelligibles at first but it comes to possess them by the Active Intellect: the Active Intellect “produc[es] [*aḥdatha*] the primary intelligibles in the potential intellect and provid[es] it with a natural propensity [*isti ‘dād*] for the other intelligibles” (128 lines 1-2). It is not fully clear from this passage how exactly these activities of the Active Intellect should be understood but al-Fārābī explains the role of the Active Intellect in ‘activating’ the intelligibles and the intellect in greater detail in other works. For example, in *MF* Ch. 13 al-Fārābī explains that the Active Intellect prepares the intelligible forms which are in matter by separating them from matter in some, and in this way the Active Intellect renders them ready to be actually intellectually grasped; so, the Active Intellect turns what is potentially intelligible into actually intelligible. Al-Fārābī illustrates this process in an analogy with the sun. A colored object is potentially visible without the illumination of the sun in the sense that even if I have a functioning eye and looking at that object in a close distance and there is no object between us blocking my sight, I cannot see it if it is not illuminated. When the sun illuminates the object, it becomes actually visible. In this way, the sun also allows my potential sight into turning into actual sight in the sense that if I am looking at the object with my functioning eyes and nothing in between blocking my sight, with the sun’s illumination of the object my potential sight comes to be actual sight because now I come to actually see the object.²³⁰ In this respect, the Active Intellect is the cause of the intellect and the intelligible (*ma‘qūl*) in the sense that it turns what is potentially intelligible into actually intelligible; also the Active Intellect prepares the intellect to be actually intellectually grasping from potentially doing so and along with this it prepares the object of intellect to be actually being intellectually grasped from potentially being so.

As I mentioned above, in the *Attainment* al-Fārābī proposes that we start from the principles of instruction in natural science and climb up to the highest principles of being in the genera studied by natural science. The study of the sublunar things at the basic level of their generation and corruption points to the motions of the heavenly bodies as their ultimate causes. As Aristotle sketches out towards the end of *GC* (II.10 and 11), the permanence of generation and corruption in a cyclical fashion in the sublunar world seems to be caused ultimately by the regularly changing amount of heat received by different regions of the earth throughout the year as a result

²³⁰ For a detailed account of al-Fārābī’s theory of intellection and a more extensive discussion of the role of the Active Intellect in it, apart from *MF* Ch. 13, see *SM* 32-6, 55, and *On the Intellect*, especially 12-32.

of the yearly motion of the sun. As it were, the change in the heat received from the sun over the year shakes up the elements in the sublunar world in a regular way and this forms the bedrock of all the more complex transformations in the sublunar world that heterogeneous substances undergo. Apparently referring to this account in *GC*, al-Fārābī says briefly in *On the Intellect* that “it was made clear in *On Generation and Corruption* [*kitāb al-kawn wa-l-fasād*] that the heavenly bodies are the parts which are the primary efficient causes [*al-aqsām al-fā’ila al-uwal*] for these [sublunar] bodies” (33.14-34.2). Al-Fārābī does not specify here in what sense the heavenly bodies are the primary efficient causes for the sublunar bodies but it is worth noting that he does not mention only the sun but all the heavenly bodies as the causes of the sublunar phenomena. He is more forthcoming in *SM* and *MF*. In these two works, he presents the view that not only the sun but the motions of all the heavenly bodies are responsible for the change in the sublunar world and they are also responsible for the existence of the prime matter. Al-Fārābī argues in *SM* that the heavenly bodies have their own diverse motions but all of them share the motion of the first heaven; so, they have their different powers ensuing from their diverse motions, but they also have a power they share on account of the motion of the first heaven they share. From this power shared by the heavenly bodies the being of the prime matter proceeds (55.13-17). Since the heavenly bodies also have their own motions, their relative positions with respect to each other and their positions with respect to the earth result in contrary states. These contrary states in their relative positions with respect to each other and with respect to the earth are responsible for the prime matter and the sublunar bodies to take on or lose contrary forms (55.17-56.11). So, the shared motion of the heavenly bodies is responsible for existence of the prime matter and the different motions of the heavenly bodies are responsible for the change in the sublunar realm. He presents this view in greater detail in *MF* too (Ch.7 9 - Ch. 8). In these accounts in *SM* and *MF*, the heavenly bodies are entirely responsible for the change and rest in the sublunar world, and the Active Intellect is only responsible for turning the potentially intelligible into actually intelligible and the potential intellect into actual intellect, but in the *Philosophy of Aristotle*, al-Fārābī seems to suggest that beyond this function the Active Intellect is also a joint cause in the change and rest in the sublunar world. In the *Philosophy of Aristotle* al-Fārābī states, similar to the other accounts, that “it was made clear that the heavenly bodies are the principles which move the elements and the other bodies” (p.129 lines 10-11). He points out the Aristotelian view that most living things produce another thing of their kind (e.g., human

parents produce a human offspring) and adds that Aristotle “should inquire into these, and more than this, he should inquire into the thing which provides humanity in general [*al-insāniyya fī al-jumla*] and donkeyness in general and the form of each species... so he should inquire into the thing which provides the form of this species and in general the thing which provides the forms of [all] the species, that is, whether it is the heavenly bodies or the Active Intellect or that the Active Intellect provides the form and the heavenly bodies provide the motion of the matters; for up to now it has not been made clear²³¹ that the heavenly bodies provide the natural bodies other than [their] motion” (p.130 lines 1-8). Although al-Fārābī puts it as a question as to whether the Active Intellect provides the forms of the sublunar things and the heavenly bodies only move their matters, he seems to endorse this view, or at the very least, he considers it to be a serious option.

So, our investigation of the natural things, in one way, leads up to the motions of the heavenly bodies. As I argued above, according to the picture in *SM* but apparently also in *MF* and *On the Intellect*, when we inquire into the causes of the motions of the heavenly bodies, we provide another borderline natural explanation: they are moved by their souls, or their quasi-forms which are their intellects subsisting in their substrates. We can ask why something has its motion or some attribute that it has, or we can ask why something exists. In the second case, we would be seeking a cause of being. As I briefly mentioned above, a cause of being for something could mean two things: either the cause of its generation, or the sustaining cause of its permanence. The cause of generation for the sublunar things would be other sublunar things and the heavenly bodies (e.g., an animal is produced by its ancestors with the joint cause of the motions of the heavenly bodies). The sustaining cause for the permanence of the sublunar things would also be other sublunar things and the heavenly bodies (or rather, as explained in *SM* and *MF*, the motions of the heavenly bodies are *ultimately* responsible for the existence of the prime matter and all the change and permanence in the sublunar world). When we come to the cause of being for the heavenly bodies themselves, since they are eternal, there is no cause of their generation. As for their sustaining cause of permanence, we saw that we are no longer in the realm of natural beings and we discover the immaterial separate intellects, i.e., the seconds, each of which is the cause of being for a heavenly sphere.

²³¹ I adopt Mahdi’s addition of لم at line 7.

The other path tracing up the causes to another highest cause in natural things is through the study of living things. As al-Fārābī sketches out in the *Attainment* (E14, 17, A12, 15) and describes in the *Philosophy of Aristotle* (37-99), we study natural beings, roughly, in the following order: after studying the elements, and the homogenous bodies, we study the heterogenous bodies, and then the living beings that have these heterogenous bodies as their parts, i.e., the plants and the animals; when we reach the animals, we investigate, first, the irrational animals and then the rational animals. The substance of the rational animals is perfected when their intellects are fully actual but there must be something which acts on and makes potential intelligibles actual intelligibles and potential intellects actual intellects. This thing must be a fully actual intellect; so, it must be completely immaterial and outside nature (see, in particular, *Attainment* E17, A15 and *Philosophy of Aristotle* 98-9).

In short, the case with natural science fits into the way of passage from one science to another that al-Fārābī describes in the *Attainment*. In natural science, we start from the principles of instruction and climb up to the principles of being in the genera studied by natural science. Once we reach the highest causes in these natural genera, i.e., the heavenly bodies and intellection, from these highest causes, we demonstrate the ‘that’ of the principles of instruction in metaphysics (i.e., that the separate intellects which are the causes of being for the heavenly bodies exist and that the Active Intellect which ‘activates’ the potential intelligibles and the potential intellects exists), and in turn, using these principles of instruction in metaphysics (along with other appropriate principles), we can demonstrate the ‘why’ of the highest causes in the genera studied by natural science (possibly with the ‘why’ and the ‘that’ of other things in addition). Then starting from these principles of instruction in metaphysics we climb up to the highest principle of being among the immaterial things:

T14 *Attainment*, E19, A17-8

فَيَبْتَدِئُ وَيَنْظُرُ فِي الْمَوْجُودَاتِ الَّتِي هِيَ بَعْدَ الطَّبِيعِيَّاتِ وَيَسْلُكُ فِيهَا الطَّرِيقَ الَّتِي سَلَكَهَا فِي الطَّبِيعِيَّاتِ وَيَجْعَلُ مَبَادِئَ التَّعْلِيمِ فِيهَا مَا يَتَّفِقُ أَنْ يَوْجَدَ مِنَ الْمَقْدِمَاتِ الْأُولَى الَّتِي تَصْلُحُ لِهَذَا الْجِنْسِ، ثُمَّ مَا قَدْ بُرِّهَنَ فِي الْعِلْمِ الطَّبِيعِيِّ مِمَّا يَلِيقُ أَنْ يَسْتَعْمَلَ مَبَادِئَ التَّعْلِيمِ فِي هَذَا الْجِنْسِ، وَتُرْتَّبُ التَّرْتِيبَ الَّذِي سَلَفَ ذَكَرَهُ إِلَى أَنْ يُصَارَ إِلَى شَيْءٍ شَيْءٍ مِمَّا فِي هَذَا الْجِنْسِ مِنَ الْمَوْجُودَاتِ. فَيَتَبَيَّنُ الْفَاحِصُ عَنْهَا أَنَّهُ لَيْسَ يُمْكِنُ أَنْ يَكُونَ لَشَيْءٍ مِنْهَا مَادَّةٌ أَصْلًا وَإِنَّمَا يَنْبَغِي أَنْ يَفْحَصَ فِي كُلِّ وَاحِدٍ مِنْهَا مَاذَا وَكَيْفَ وَجُودِهِ وَمِنْ أَيِّ فَاعِلٍ وَلِمَاذَا وَجُودِهِ. فَلَا يَزَالُ يَفْحَصُ هَكَذَا إِلَى أَنْ يَنْتَهِيَ إِلَى مَوْجُودٍ لَا يُمْكِنُ أَنْ يَكُونَ لَهُ مَبْدَأٌ أَصْلًا مِنْ هَذِهِ الْمَبَادِئِ لَا مَاذَا وَجُودِهِ وَلَا عَمَّاذَا وَجُودِهِ وَلَا لِمَاذَا وَجُودِهِ بَلْ يَكُونُ هُوَ الْمَبْدَأُ

الأول لجميع الموجودات التي سلف ذكرها ويكون هو الذي به وعنه وله وجودها بالأنحاء التي لا تُدخِل عليه نقصاً أصلاً بل بأكمل الأنحاء التي بها يكون الشيء مبدأً للموجودات

فإذا وقف على هذا فحص بعد ذلك عما يلزم أن يحصل في الموجودات إذ كان ذلك الوجود مبدأها وسبب وجودها فيبتدئ من أقدمها رتبة في الوجود وهو أقربها إليه حتى ينتهي إلى آخرها رتبة في الوجود وهو أبعدا عنه في الوجود فتحصل معرفة الموجودات بأقصى أسبابها. وهذا هو النظر الإلهي في الموجودات. فإن المبدأ الأول هو الإله وما بعده من المبادئ التي ليست هو أجساماً ولا في أجسام هو المبادئ الإلهية

[1] So he starts to investigate the beings which are after the natural ones [i.e., the metaphysical things] and in [his investigation of] them he adopts the methods he adopted in [his investigation of] the natural things. [2] He posits [two kinds of] principles of instructions [for the metaphysical things]: the first premises which happen to be appropriate for this genus [i.e., the metaphysical things], and next, [the premises] which are demonstrated in natural science and are suitable to be used as principles of instruction in this genus. [3] [The metaphysical things] are ordered according to the order mentioned before until one gets to each being in this genus one by one. The person who inquires into these perceives clearly [*yatabayyanu*] that none of these can have matter at all and he ought to inquire into each of them as to what and how its being is [i.e., the formal cause], from which agent [*fā'il*] [its being is] [i.e., the efficient cause], and for what its being is [i.e., the final cause].²³² [4] He continues to inquire like this until he reaches a being among these principles which cannot have a principle at all, [concerning] what its being is [i.e., the formal cause], nor from what its being is [i.e., the efficient and the material causes]²³³, nor for what its being is [i.e., the final cause]; rather, it is the first principle for all the beings mentioned before and it is that by which [*bihi*], from which [*'anhu*], and for

²³² As indicated in the *Attainment* E6, A5, and briefly discussed in Footnote n.199 above, the questions of what (*mādhā*), by what (*bi-mādhā*) and how (*kayfa*) something's being is request its formal cause, the question of from what (*'ammādhā*) its being is requests its material cause and efficient cause, and the question of for what (*li-mādhā*) its being is requests its final cause. It seems that al-Fārābī does not use the question "from what [*'ammādhā*]" here which can be used to request both the efficient cause and the material cause since he emphasizes that the metaphysical beings do not have a material cause; instead, he specifies that we should answer the question of "from which agent" their being is, i.e., we should seek to find their efficient cause (in addition their formal and final causes).

²³³ See the previous footnote about the question of "from what [*'ammādhā*]" something's being is and Footnote n.199 for the source in Aristotle of the interpretation of this question as requesting both its efficient cause and material cause.

which [*lahu*] their being is²³⁴ in ways which do not produce any deficiency in it at all but in the most perfect way in which something would be the principle of the beings.

[5] So when he comprehends this [i.e., the first], he inquires next into what necessarily comes about in the beings [*mawjūdāt*] since that being [*wujūd*] is their principle and the cause of their being [*wujūd*]. He starts from what is nearest to it in the rank of being and [then] what is nearest to that until he reaches the last one of them in the rank of being, which is the most remote of them from [the first] in being. So, the knowledge of the beings [*mawjūdāt*] come about by virtue of their remotest cause [sc. the first]. [6] This is the divine investigation [*al-naẓar al-ilāhī*] into the beings because the first principle is God [*al-ilāh*] and the principles coming after it which are not bodies nor in bodies are the divine principles [*al-mabādi' al-ilāhiyya*].

For ease of discussion, I divided this passage into smaller chunks and numbered them. Let me comment on the whole passage first, then I will clarify some details in it. Al-Fārābī argues in this passage as a whole that in metaphysics we pursue the same methods as the methods we pursued in natural science. This consists in starting from two kinds of principles of instruction and climbing up pursuing higher and higher causes until we find the highest cause in this genus, i.e., among the immaterial things studied in the theology part of metaphysics. Since we are told that we follow the methods we used in natural science, it must be the case that in this causal order, using something lower in the order, we demonstrate that its cause exists until we finally demonstrate that there exists a first cause of everything. This is the ‘way-up’ to the highest cause of the metaphysical things, and hence all the beings in reality, i.e., God, described in (2)-(4) in

²³⁴ Since, as explained above in Footnote n.232, the question of *bi-mādhā* something’s being is requests its formal cause, we would expect al-Fārābī’s claim here that the being of the other immaterial substances is by God (*bihi*) to indicate that God is the formal cause of the other immaterial substances, but it does not seem likely to me that al-Fārābī would hold such a view. Moreover, since the question of *‘ammādhā* something’s being is requests both its efficient and material causes, we would expect al-Fārābī’s claim here that the being of the other immaterial substances is from God (*‘anhu*) to indicate that God is the efficient and the material causes for the immaterial substances, but since these substances are immaterial, they would not have a material cause either. So when al-Fārābī says here that the being of the immaterial substances is by God (*bihi*) and from God (*‘anhu*), he does not probably use these prepositions in a way that correspond to their use with the interrogative pronoun *mādhā* to request the formal, the material, and the efficient causes of something; rather “by God” and “from God” should probably be interpreted as indicating more vaguely the fact that the being of the other immaterial substances (directly or indirectly) obtains by or proceeds from God. All considered, al-Fārābī’s considered view seems to be that God is the efficient and the final causes of being for the other immaterial substances (directly or indirectly) and although God is not the form of the other immaterial substances, God is also the cause of their form in the sense that God is the efficient and the final cause of the persistence of these immaterial substances as pure forms.

T14. In the rest of this passage, i.e. (5)-(6), al-Fārābī describes the ‘way-down’: starting from the first and pursuing what is immediately caused by it and then what is immediately caused by that and so on, we go through the immaterial beings studied in metaphysics and explain how they cause their effects by virtue of their attributes, until we reach the lowest one in rank of being among these immaterial substances, i.e., the Active Intellect. Since we pursue the method al-Fārābī pursues in natural science and described earlier in the *Attainment*, in the ‘way-down’, we explain the ‘why’ of an effect from its cause. Finally, we spell out how these immaterial principles explain the ‘why’ of the highest causes in the realm studied by natural science, i.e., the heavenly bodies and intellection. This is what the theology part of metaphysics comprehends and as al-Fārābī explicitly puts it in (6), the investigation in this part of metaphysics is called the “divine investigation” or the theological investigation (*al-naẓar al-ilāhī*) because of the things investigated here: the first cause is God, and the other principles are “divine principles [*al-mabādi’ al-ilāhiyya*].”

This description of the ‘way-up’ and the ‘way-down’ of the theology part of metaphysics closely follows the description of the ‘way-up’ and the ‘way-down’ of the theology part in the *Enumeration* as summarized above in Section 2. There are only two major things that are mentioned in the *Enumeration* account but skipped in the *Attainment* account. First, in the *Enumeration* account we are told that after we demonstrate that the first cause exists, we go on to demonstrate its attributes: that nothing else shares its rank of being, it does not have a partner (*naẓīr*) nor a contrary, there is nothing prior to it but everything else is posterior to it, it does not receive its being, unity, and reality (*ḥaqīqa*) from anything else but everything else receives their being, unity, and reality from it; it is simple and there is no multiplicity in it. The second major thing that is mentioned in the *Enumeration* account but not in T14 from the *Attainment* is that in the ‘way-down’, we also show that the first’s effects on the rest of reality have a providential character. In fact, in his mature metaphysical accounts in *MF* and *SM* where he presents only the ‘way-down’ of metaphysics, al-Fārābī argues extensively that the first has these attributes²³⁵ and also his general account in these two works reveals a providential order in reality starting from the most perfect being all the way down the least perfect in a decreasing order of

²³⁵ See, in particular, *MF* Ch.1-2 (and a very similar account in *SM* 42-52) where there is a close agreement between the attributes of the first mentioned in the *Enumeration* account and its attributes discussed in *MF* and *SM*. For a clear overview of al-Fārābī’s arguments in these works to establish that the first has these attributes, see Menn, *Al-Farabi’s Metaphysics* Section 4.

perfection, and in this system each thing has its place according to the perfection allowed by its nature and by the overall order of whole reality. So, we should assume that the account in the *Attainment* is incomplete as its purpose is not to describe completely the topics investigated in the theology part of metaphysics.

As briefly mentioned above, in (1) of T14, al-Fārābī declares that in metaphysics he follows the methods he followed in natural science. In part, this claim entails that, as stated in (2), we have two kinds of principles of instruction in metaphysics. First, among the first premises (*al-muqaddimāt al-uwal*) which seem to be what I called the self-evident truths above,²³⁶ we adopt those that are appropriate for the investigation in metaphysics as our principles of instruction. Second, we adopt as our principles of instruction in metaphysics also those propositions of the ‘that’ of the causes of the highest causes in natural things we demonstrated in natural science. That is to say, we demonstrated in natural science that there are immaterial causes of being for the heavenly bodies. We also demonstrated in natural science that there is an immaterial cause which ‘activates’ potential intelligibles and potential intellect, i.e., the Active Intellect. These are the premises which are demonstrated in natural science that are adopted as principles of instruction in metaphysics.²³⁷

As indicated in (3) of T14, the immaterial substances are ordered in a certain way and our inquiry in the ‘way-up’ should proceed according to that order. As it becomes clear in (3) and (4), this is a causal order. Also, as summarized above, in the *Enumeration* description of the ‘way-up’ in the theology part of metaphysics, we demonstrate that the immaterial substances are ordered according to an order of perfection in being. As briefly mentioned above, it is stated or implied in *MF* and *SM* (and the discussion in *On the Intellect* is consistent with this) that the order of perfection among the immaterial substances has the first at the top, then the separate intellects of the nine heavenly spheres ordered according to the order of these heavenly spheres (starting with

²³⁶ More on this, see Footnote n.203 above.

²³⁷ Or perhaps we should say the following: in natural science, we demonstrate that the heavenly bodies exist as the ultimate causes of the change and rest in the sublunar world, and that intellection is the highest soul faculty in the living things. Then taking these premises as our principles of instruction in metaphysics (and using other appropriate principles of instruction in metaphysics), we demonstrate in metaphysics that there are causes of being for the heavenly bodies and that there is a cause which ‘activates’ intellection. In any case, where exactly we draw the boundary between what is the last thing demonstrated in natural science and what is the first thing demonstrated in metaphysics is not as important as getting clear on which entities are studied by natural science and which entities are studied by metaphysics.

the first heaven, then the heaven of the fixed stars, and the remaining seven heavenly spheres in the Ptolemaic system according to their order in the Ptolemaic system from the outermost to the innermost ending in the sphere of the moon), and finally, we have the Active Intellect. Moreover, as I explained above, according to *MF* (and the discussion in *On the Intellect* is consistent with this), the first directly causes the first second, i.e., the separate intellect of the first heaven, then the separate intellect of the first heaven directly causes the separate intellect of the heaven of the fixed stars, and it goes on in this way until the separate intellect of the heaven of the moon; this last one causes the Active Intellect. By contrast, in *SM*, the first is the direct cause of being for all the seconds and the Active Intellect.

In short, we are told in the *Enumeration* account of the theology part that we should demonstrate that the immaterial substances are ranked according to their perfection, whereas in the *Attainment* account it seems that primarily we should pursue the order of these immaterial substances according to their causal order. The order of perfection among these immaterial substances matches their causal order according to the account of their causal order in *MF* but it does not according to the account of their causal order in *SM*. According to the account in *SM* the first directly causes all the seconds and the Active Intellect; so, e.g., the separate intellect of the first heaven is more perfect than the separate intellect of the heaven of the fixed stars, but according to the account of their causal order in *SM*, the former is not the cause of being for the latter, whereas according to the account of their causal order in *MF*, it is.

It seems puzzling to me that the causal order among the immaterial substance in the *SM* account comes apart from their order of perfection; given his metaphysical commitments it seems that al-Fārābī should claim that the order of perfection among the seconds and the Active Intellect is grounded in, or at least, closely associated with the causal relations among them. Indeed, there is little doubt that the order of perfection among the immaterial substances and their causal order are closely associated in *MF*. So, according to the causal order and the order of perfection in being among the immaterial substances in *MF*, when we demonstrate the ‘*that*’ of the cause from its effect in the ‘way-up’ in theology, we proceed tracing the order of perfection among the immaterial substances.

As al-Fārābī puts it in (3) of T14, in tracing up the causal order among the immaterial substances, we will consider the efficient, the formal, and the final causes of each of them. Now, it does not

seem likely that al-Fārābī would think that, e.g., the separate intellect of the first heaven is the cause of being for the separate intellect of the heaven of the fixed stars in the sense that it is literally the form of the separate intellect of the heaven of the fixed stars. So, it seems that when we demonstrate that, e.g., the separate intellect of the first heaven is the cause of being for the separate intellect of the heaven of the fixed stars, we should demonstrate that it is the efficient and the final cause of the persistence of the separate intellect of the heaven of the fixed stars as an immaterial substance, hence as a pure form. As al-Fārābī puts it in (4) of T14, we finally reach a principle which does not have a further principle but is the principle of everything else (directly or indirectly); as I also suggested in Footnote n.234 above, for similar reasons, al-Fārābī should mean that the first is the cause of being for the separate intellect of the first heaven in the sense that it is the efficient and the final causes for the persistence of the separate intellect of the first heaven as an immaterial substance, hence as a pure form.

This all looks neat but why do we assume that each of these immaterial substances other than God has a cause of being? Cannot we assume that it is a brute fact that these immaterial substances exist, i.e., that we have many firsts (i.e., many uncaused or self-caused things), and the separate intellects of the heavenly bodies and the Active Intellect are all our firsts? I sketched out an answer to this question above: insofar as they have structural complexity in their substance or essence, they must have a cause of being. As I summarized above, the sort of structural complexity that is mentioned in *SM* is that each of these immaterial substances has (at least)²³⁸ two acts of intellection: it intellectually grasps its own essence, and it intellectually grasps the first. Since these immaterial substances are actual intellects in their essences (because they do not have any matter that would prevent them from actual intellection), and since when X intellectually grasps two objects, it has two distinct acts of intellectually grasping, each of these immaterial substances ends up having a complexity in its essence. Based on this, we can infer that each of these immaterial substances has a cause of being. To be clear, when al-Fārābī asserts in *SM* on p.40 that the seconds and the Active Intellect have this sort of complexity, he does not use this fact to infer that they must have a cause of being. The context of this claim is to explain the claim that the seconds and the Active Intellect need to intellectually grasp the first in addition to their own essences for their splendor and beauty of being (*bahā' al-wujūd wa-zīnatuhu*).

²³⁸ As mentioned above, according to *SM*, each second intellectually grasps its essence and the first, but the Active Intellect intellectually grasps its essence, the first, and all the seconds.

However, since both in *MF* and *SM* al-Fārābī seems to hold that something has complexity in its essence just in case it has a cause of being, when we pose to *SM* the question “how do we know that the seconds and the Active Intellect have causes of being,” the answer would presumably be “because they have complexity in their essences.” If we pose to *SM* the question “how do we know that they have complexity in their essences,” an answer that can be formulated based on what is actually stated in *SM* is “because each of them has multiplicity in its essence and this is because it intellectually grasps two distinct things, its essence, and the first.”

In *On the Intellect*, we found a different picture of structural complexity that can be used to justify the inference that these immaterial substances must have another thing as their cause of being. As explained above, al-Fārābī suggests explicitly about the separate intellect of the first heaven (but presumably this argument can be adapted to the other separate intellects too) that it produces two effects: the first heaven, and the separate intellect of the heaven of the fixed stars. Al-Fārābī argues that producing such two different effects by its essence means that it is constituted as a substance through two natures corresponding to these two activities. Let me call the account of structural complexity described in *On the Intellect* complexity from multiple products, and the account of structural complexity described in *SM* complexity from multiple objects of intellection.

It is stated in *MF* (and apparently implied in *On the Intellect*) that the first produces only a single thing, the separate intellect of the first heaven. So, according to this account, the first does not have complexity from multiple products. However, in *SM*, we are told that the first directly produces all the seconds and the Active Intellect. So, according to the account of the first in *SM*, the first suffers complexity from multiple products. If that is the case, then the first would no longer be the first, because if it has complexity, it must be caused, and hence cannot be the first. On the other hand, according to *SM*, the first intellectually grasps only one thing, its essence. It is not explicitly stated in *On the Intellect*, and as far as I can see, it is not explicitly stated in *MF* either, but it is compatible with the accounts of the first in *MF* and *On the Intellect* that the first only intellectually grasps its essence. So, in *SM*, the first does not suffer complexity from multiple objects of intellection, and it is compatible with the accounts of the first in *On the Intellect* and *MF* that the first does not suffer this sort of complexity.

So, *SM* has internal coherence at least in this respect in that *SM* seems to recognize only the complexity from multiple objects of intellection, and the first, according to its account in *SM*, does not suffer this sort of complexity. That said, there is a further issue. Recall al-Fārābī's example in the *Book of Demonstration* taken from *APo* to illustrate how we can demonstrate the 'that' of the cause from its effect: from the fact that the moon has its particular phases, we can demonstrate that the moon has a spherical shape. For this inference to be sound, our premise must be true, i.e., that the moon has in fact those particular phases. We can ascertain the truth of the fact that the moon has those particular phases by perception. How can we ascertain that the immaterial substances other than God have complexity from multiple products or complexity from multiple objects of intellection? In other words, how do we know that, e.g., the separate intellect of the first heaven intellectually grasps its essence as well as the first (according to the account of complexity taken from *SM*) or that it produces the first heaven as well as the separate intellect of the heaven of the fixed stars (according to the account of complexity taken from *On the Intellect*)? Let's consider the claim from *SM* first: perhaps starting from some observations about intellection taken from psychology, we can argue that each immaterial substance must intellectually grasp its essence. But I do not know how we can justify the claim that the separate intellects and the Active Intellect intellectually grasp also the first based on observation or things demonstrated in natural science or in metaphysics unless we first demonstrate the causal order among these immaterial substances and then from this and using some relevant premises in addition we demonstrate that these causal relations cannot be explained unless we ground them in the seconds' and the Active Intellect's activity of intellectually grasping the first. That is to say, if we show that the first is a cause of being for the Active Intellect, and if we show that the first's being a cause of being for the Active Intellect can only mean that the Active Intellect subsists by intellectually grasping the first, from the first's being a cause of being for the Active Intellect, we can show that the Active Intellect intellectually grasps the first. But this is exactly the opposite of how we want our 'way-up' inference from the effects to the causes to go. We want to use the fact that the seconds and the Active Intellect have this sort of complexity precisely to infer that they have causes of being. We have another problem with the account of complexity taken from *SM*. We want to use the complexity in the essences of the seconds and the Active Intellect not only to show that they have causes of being, but also to demonstrate the existence of the first and that the first directly causes all the seconds and the Active Intellect (according to their causal order in

SM). It appears that we can do this as follows: from the complexity of each of them, we can infer that it has a cause of being; barring infinite regress and circularity of causation, we can infer that each must have finitely many causes of being in an upwards causal chain, and since we can independently show that there must ultimately be a single first, i.e., something which does not have a cause distinct from itself,²³⁹ the chains of the causes of being starting from the seconds and the Active Intellect must terminate at the first; the simplest model would be to assume that this upwards causal chain has only a single step. It seems that in this way we can show the causal order among the immaterial things according to their causal order in *SM*, namely that all the seconds and the Active intellect directly have the first as their cause of being. So, we want the complexity in the essences of the seconds and the Active Intellect to demonstrate the existence of the first using a reasoning like this, but according to the account of complexity taken from *SM*, we would be question-begging because we start from the premise that each of the seconds and the Active Intellect intellectually grasp both its essence *and the first*.

Using the account of complexity taken from *On the Intellect* might be more promising for pursuing the ‘way-up’ in theology, demonstrating the ‘*that*’ of the causes from the effects. Recall that according to the account of the causal order among the immaterial things in *MF* (and the account in *On the Intellect* seems to agree with this), the cause of being for the Active Intellect is the separate intellect of the lowest heaven, i.e., the heaven of the moon, and the cause of being for the separate intellect of a heaven is the separate intellect of the heaven right above it; it goes like this all the way up to the separate intellect of the first heaven, and finally, the cause of being for the separate intellect of the first heaven is the first. So, according to the account in *MF* (and apparently also the account in *On the Intellect* agreeing with it), we want to show that none of the seconds and the Active Intellect is a first, i.e., that all of them have a cause of being distinct from themselves, and moreover, we want to show that there is this particular causal order among them. Our end game is to demonstrate this causal order moving from the effects to the causes and we will use the complexity in the essences of the seconds and the Active Intellect for this purpose.

²³⁹ See Menn, *Al-Farabi's Metaphysics* Section 4 for a helpful analysis of the arguments for the uniqueness of the first in *MF* Ch.1 2 (also see *SM* p.43 for these arguments).

As explained above, we demonstrate as the last thing in natural science or as the first thing in metaphysics that, e.g., the separate intellect of the first heaven is the cause of being for the first heaven. Also, if we already demonstrated that the cause of being for the separate intellect of the fixed stars is the separate intellect of the first heaven, we would be done in the last step of climbing up the causes in the ‘way-up’ because we would have already demonstrated that the separate intellect of the first heaven produces the first heaven as well as the separate intellect of the heaven of the fixed stars. So, we would have shown that the separate intellect of the first heaven has complexity from multiple products, and hence, we can infer that the separate intellect of the first heaven must have a cause of being; then we can successfully move on to the next step of demonstrating that this cause must be the first as sketched out above (i.e., we can independently show that there must be a single first, and avoiding infinite regress and circular causation, and on account of simplicity, we can infer that the cause of being for the separate intellect of the outermost heaven must be the first). In other words, the success of the last step in our pursuing up the causes in the ‘way-up’ depends on the success of the penultimate step. That is, we must have already shown that the separate intellect of the heaven of the fixed stars has the separate intellect of the first heaven as its cause of being. Showing this requires two things: first, there is a cause of being for the separate intellect of the heaven of the fixed stars, and second, this cause is nothing but the separate intellect of the first heaven. To show the first claim, we must show first that the separate intellect of the heaven of the fixed stars has the relevant sort of structural complexity, i.e., it produces the heaven of the fixed stars and the separate intellect of the next heaven, sc., the heaven of Saturn. Since we must have already showed that the separate intellect of the heaven of the fixed stars is the cause of being for the heaven of the fixed stars, all we need to show is that the separate intellect of the heaven of the fixed stars is the cause of being for the separate intellect of the heaven of Saturn. So, the success of this step also presumes the success of the previous step in our ‘way-up’ demonstrating the ‘*that*’ of the causes from the effects. But even if the previous step was successful, this would only be enough for us to show that there is *a cause* of being for the separate intellect of the heaven of the fixed stars; we need a further argument to demonstrate that this cause cannot be anything but the separate intellect of the first heaven (e.g., we do not jump directly to the first). If these partially recursive demands are to be discharged successfully as a whole, we need two things: first we need to demonstrate that the Active Intellect essentially produces, at least, two things and hence must have a cause of

being, and we must also demonstrate in each step that the cause of being for the immaterial substance considered in that step is not some other immaterial substance but exactly that immaterial substance that comes right before it in the order of decreasing perfection or the order of causes to effects mentioned before. In other words, it is not enough for us to show that, e.g., the separate intellect of the sphere of Mars has a cause of being; for the reasoning sketched out here to be successful, we must be able to demonstrate also that this cause is nothing but the separate intellect of the sphere of Jupiter.

As far as I know, al-Fārābī does not say enough anywhere for us to figure out how he could argue to fulfill these two demands so that we could have a clear demonstrative path showing the ‘*that*’ of a cause from its effect tracking the immaterial substances exactly according to their mentioned order of perfection in being or order of causes of being. That said, al-Fārābī presents some relevant reasonings that fall short of fulfilling the two demands I described above, yet they seem to suggest his awareness of this problem and the need to address it. He explicitly argues in *On the Intellect* that the Active Intellect is not the first principle (32-4): the Active Intellect turns the potentially intelligible form in matter into actually intelligible by separating it from matter in some way. But the Active Intellect does not always act; it needs to encounter material things to act on or its action on them must not be obstructed by something else. So, the Active Intellect by itself is not entirely capable of bringing about its act; it needs the matter to be ‘presented’ to it and it must not be obstructed by some other material thing. So, whatever is the primary cause of “the bodies subject to generation and corruption [*ajṣām mutakawwina fāṣida*]” will be the joint cause of the activity of the Active Intellect because the Active Intellect acts on either such bodies or some powers in such bodies. Al-Fārābī adds that according to Aristotle’s *GC*, the heavenly bodies are the first efficient causes (*al-fāʿila al-uwal*) of the bodies in the sublunar world. If this argument is sound, it establishes that the activity of the Active Intellect is causally conditioned by the motions of the heavenly bodies and hence the Active Intellect is not the first principle of everything because the first principle of everything would not need another joint cause to bring about its effect. Since, presumably the activity of the Active Intellect does not condition the activities of the heavenly bodies, this argument would also establish that the causes of the heavenly bodies are in a sense prior to the Active Intellect because the activity of the Active Intellect is conditioned by the activities of the causes of the heavenly bodies but the activities of the causes of the heavenly bodies are not conditioned by the activity of the Active Intellect.

However, this priority is not enough to demonstrate that the Active Intellect itself has a cause of being and that this cause of being is nothing but the separate intellect of the sphere of the moon (or whichever separate intellect of a heavenly sphere we want to make come right before the Active Intellect if we revise the causal order among the immaterial substances).

Also, in *MF* Ch. 7 1, al-Fārābī asserts, following the version of the Ptolemaic system he uses, that the motion of the first heaven (daily motion) is shared by all the heavens and the motion of the second heaven, i.e., the heaven of the fixed stars (precession of the fixed stars) is shared by all the heavens below it. This shows that insofar as the separate intellect of a heaven is the indirect cause of the motion of this heaven, the activity of the separate intellect of the first heaven conditions the activities of all the other separate intellects of the remaining heavens but not the other way around. Similar sort of priority can also be established about the separate intellect of the heaven of the fixed stars with respect to the separate intellects of all the other heavens below the heaven of the fixed stars. That said, again this sort of priority falls short of providing what we want to show. We want to show, e.g., that the cause of being for the separate intellect of the heaven of the fixed stars is not, e.g., directly the first, but the separate intellect of the first heaven. But, for example, the activity of a lumberjack conditions the activity of a housebuilder in the sense that if the lumberjack supplies sturdy lumber, the housebuilder would end up building a sturdy house (assuming that the housebuilder does not lack other materials); so in this example, the activity of the lumberjack conditions the activity of the housebuilder but we would not infer from this that the lumberjack or his art is the cause of being for the housebuilder or for his art.

In any case, my purpose here is not to present a comprehensive account of how al-Fārābī argued or was likely to argue to demonstrate this exact causal chain moving from an effect to demonstrate the existence of its cause in the ‘way-up’ part of theology. I just wanted to outline how he might proceed and flag some issues within this picture.

Section 6: The subject-matter of metaphysics in *KH* and the outline of how al-Fārābī executes the ontology part in *KH* and *KW*

In the previous section I sketched out how the ‘way-up’ of the theology part of metaphysics would look like, and I briefly described how the ‘way-down’ of the theology part is presented in *SM* and *MF*. In this section, I will describe in outline how the ontology part of metaphysics is presented in *KH* and *KW*, but first I will try to clarify al-Fārābī’s account of the subject-matter of metaphysics in *KH*: we will see that whether *KH* is a work of metaphysics is not obvious according to the description of the subject-matter of metaphysics in *KH* itself.

In *KH* 11-17, al-Fārābī presents an account of the subject-matters of the art of logic (*ṣinā‘at al-manṭiq*), mathematics, natural science, metaphysics (*‘ilm mā ba‘da al-ṭabī‘a / al-ṭabī‘iyya* (*KH* 11 66.20-1, *KH* 17 69.18)), and political science. At the end of this discussion, he announces that this is the end of the discussion of “the theoretical sciences [*al-‘ulūm al-naẓariyya*]” (*KH* 17 69.20-1). Although it is not entirely clear whether this statement also includes logic in the theoretical sciences or not, even if logic is not considered a theoretical science, it is clearly considered together with these theoretical sciences. As we saw already in the *Attainment* and in various works by al-Fārābī reviewed in Section 4, these five theoretical sciences (or the four theoretical sciences plus the art of logic as their tool) reflect al-Fārābī’s version of the late antique division of philosophy accounts.

Al-Fārābī argues in *KH* 6-7 (64.4-19) that the first thoughts (*al-ma‘qūlāt al-uwal*)²⁴⁰ come about in the soul from the perceptible things, and it is implied that they are “likenesses [*mithālāt*]” of the perceptibles²⁴¹ or “depend on [*tastanidu ilā*]” them in some other direct way, and they are the thoughts of “things outside the mind [*khārija al-naḥs*].” By contrast, when these first thoughts come about in the soul, they come about with some features attached to them (*lawāḥiq*) insofar as they are in the soul, so that these first thoughts in the soul become genera or species, or they come to be known (*ma‘lūma*), or thought (*ma‘qūla*), or some of these first thoughts in the soul come to explain (*mu‘arrif*) others; these features which attach to the first thoughts in the soul

²⁴⁰ As Menn points out (*Al-Fārābī’s Kitāb al-Ḥurūf*, 79, n.28), *ma‘qūl* in this context (where al-Fārābī makes a distinction between the first and the second *ma‘qūl* which is the source of the theory of the first and the second *ma‘nan / intentio* in later Arabic and Latin philosophy (on al-Fārābī’s being the source of this theory, see Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 81)) means thought in general, not specifically *intelligible* (as opposed to *sensible*) thought, and it corresponds to the Greek term *noēma*.

²⁴¹ See *DI* 1 16a3-8, and Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 79, n.28.

insofar as they are in the soul are themselves also thoughts, but in contrast with the first thoughts which directly derive from the perceptibles outside the soul, these higher order thoughts are called the second thoughts (*al-ma'qūlāt al-thawānī*). Of course, we can have thoughts that attach to the second thoughts: for example, the fact that a first thought is known can itself also be known. However, al-Fārābī makes it clear that we do not need a separate category in such cases (e.g., third, fourth, fifth etc. thoughts), but rather, all these iterated applications of thoughts which are already thoughts in the soul should be called second thoughts because they have the same conceptual content (i.e., whether we have knowledge of, e.g., the color white, or knowledge of this knowledge, in both cases, we have knowledge, although of different objects) (*KH* 8-9).

Al-Fārābī asserts that the first thoughts are the “primary subjects [*al-mawḍū'āt al-uwal*]” of the art of logic, mathematics, natural science, metaphysics, and political science (*KH* 11), but since every first thought has second thoughts attached to it insofar as it is in the soul, the first thoughts do not exist by themselves in the soul. So, the art of logic studies them along with some second thoughts attached to them (e.g., insofar as first thoughts are denoted by expressions (*madlūl 'alayhā bi-alfāz*), insofar as they are universals, predicates and subjects etc.) (*KH* 12) while in the case of the other four sciences, we gain knowledge of the relevant first thoughts by means of some second thoughts attached to them, but after we gain knowledge of these first thoughts, we consider them as separated from these second thoughts (*KH* 13).

Of the things that fall under the categories, i.e., the perceptible particulars and their universals (*KH* 4-6), some proceed from (*kā'in 'an*) the human will while others do not; the former are studied by political science and the latter by natural science (*KH* 14). The mathematician investigates “the classes of what is a quantity [*kamm*] and the things from the other categories whose existence in these species of quantity is necessitated by the quiddities of these species of quantity after [the mathematician] abstracts them [*yujarridahā*] in his mind and separates them [*yukhalliṣahā*] from the other things to which they [sc., quantities] attach and belong accidentally [*ta'riḍu lahā*], whether these [other things] proceed from the human will or not.” So, mathematics studies the species of quantity and their *per se* attributes in the other categories (e.g., shapes in the category of quality) abstracted from the perceptible particulars to which they attach or belong accidentally (*KH* 15). By contrast, natural science “investigates each and every one of this something [i.e., (here) substantial particulars, *hādhā al-mushār ilayhi = tode ti*], and

the rest of the categories whose existence in the species of what is a this something is necessitated by the quiddity of the species of what is a this something” (*KH* 16 68.6-8). In other words, natural science studies the species of perceptible substances and their *per se* attributes in the other categories. Also, mathematics studies its objects only with respect to the formal cause, but natural science studies its objects with respect to all the four causes (*KH* 16 68.12-4; also see *KH* 236-7).²⁴²

In the rest of *KH* 16, al-Fārābī continues to talk about the subject-matter of natural science; in particular, he seems to describe an account of pursuing the causes upwards in the things studied by natural science until we hit the boundary between natural science and metaphysics. This discussion informs al-Fārābī’s discussion of the subject-matter of metaphysics in the next paragraph (*KH* 17). To put it briefly, al-Fārābī says that in its scientific investigation, natural science comes as far as investigating the remotest causes of natural things which are outside the categories, but these things outside the categories are studied by metaphysics. So, in order to understand al-Fārābī’s account of the subject-matter of metaphysics here, we need to understand the preceding discussion about natural science clearly, but some details in this passage are not easy to understand. For this reason, it is useful to quickly review al-Fārābī’s discussion of the related issues in the rest of *KH* that would help us clarify those details in *KH* 16.

In the third part of *KH*,²⁴³ al-Fārābī describes three questions that need to be answered in a scientific inquiry.²⁴⁴ As he explains in *KH* 228-234 building on *APo* II.1-10, we first ask whether X is (*hal X mawjūd*) (one-place cases) or whether X is Y (*hal X mawjūd Y*) (two-place cases);

²⁴² As al-Fārābī clarifies in *KH* 237, natural science *generally* studies the four causes but this does not mean that in every phenomenon studied by natural science, a natural scientist must give a causal account with respect to all the four causes, but rather, depending on the phenomenon, it can be with respect to one of the four causes, or two of them, or three of them, or all four of them (217.13-4). This qualifier is important because as Aristotle puts it clearly at *Met.* H.4 1044b6-15, causal explanation with respect to all the four causes would not be appropriate to explain all the natural phenomena studied by natural science (e.g., in the case of natural things which are not substances, like a lunar eclipse: since a lunar eclipse does not have matter, the material cause explanation is not relevant (instead, we are supposed to identify the underlying thing which is a substance, i.e., the moon); Aristotle states that in the case of the lunar eclipse, perhaps the final cause explanation is also not relevant. Al-Fārābī adds at the end of *KH* 237 (namely, 217.14) that the situation with political science is similar; i.e., a political scientist provides a causal account of a phenomenon studied by political science with respect to some or all of the four causes (as appropriate for the phenomenon under consideration).

²⁴³ For a summary of the topics of the three parts of *KH* and a reasonable explanation of how these three parts fit together and form one work, Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 63-71.

²⁴⁴ These three steps through three questions are carefully analyzed in Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 84-90, and by and large I follow this account in the following.

the relevant sense of being (*mawjūd*) in this first question is being as true (*ṣādiq*). In the first part of *KH*, in 88-91, al-Fārābī first distinguishes three senses of being: (1) being as divided into the categories, (2) being as true, and (3) being as circumscribed by an extramental quiddity (*munhāz bi-māhiyya khārija al-naḥs*) or as having an extramental quiddity; he then argues that the first sense reduces to the third sense. So, ultimately, we have two senses of being. The sense of being as true applies when a mental representation (*mutaṣawwar*, *mutakhayyal*, or *ma'qūl*) corresponds to reality. More precisely, “X *mawjūd*” holds according to this sense of *mawjūd* just in case there is something that is described as “X,” i.e., the idea of X is instantiated; “(some / every) X *mawjūd* Y” holds according to this sense of *mawjūd* just in case (some / every) thing that is described as “X” is also described as “Y.” On the other hand, the sense of being as circumscribed by an extramental quiddity or as having an extramental quiddity applies when the assertion is an assertion about extramental quiddities. More precisely, “X *mawjūd*” holds according to this sense of *mawjūd* just in case “X” picks out a real thing with respect to its quiddity (e.g., consider a room in which there is only one human, Socrates; “the non-cat *mawjūd*” holds according to being as true because there is a non-cat in this context, Socrates, but this claim does not hold according to being as having an extramental quiddity because “the non-cat” does not pick out Socrates with respect to his quiddity; in fact, there is no extramental quiddity of being a non-cat as part of reality. There are only quiddities of humans, of cats, of being tall etc., i.e., of positive features. On the other hand, “human *mawjūd*” holds according to both senses of being). Al-Fārābī does not fully clarify, as far as I can see, how we should interpret the two-place cases of *mawjūd* as having an extramental quiddity, but it seems that “X *mawjūd* Y” holds according to this sense of *mawjūd* just in case X is *per se* (*bi-dhātihi*) Y,²⁴⁵ and this means, generally speaking, that X’s quiddity (or Y’s quiddity) necessitates that X is Y; this holds usually because Y is the quiddity of X or a part of the quiddity of X (e.g., (every) human is rational) or X is part of the quiddity of Y (e.g., (every) human is risible).²⁴⁶ I will say more about al-Fārābī’s discussion of the senses of

²⁴⁵ On this interpretation of the two-place cases of being in the sense of being as having an extramental quiddity, compare *KH* 99, but see especially the brief discussion of the two-place case of the second *hal* question below.

²⁴⁶ For al-Fārābī’s discussion of the senses of *per se* in *KH*, see 76-9. In another work, I intend to present a review of al-Fārābī’s accounts of the sense of *per se* in *KH* and in his other works along with a discussion of his sources and the theoretical interests that shaped the distinctive features of his account.

being, especially the sense of being as circumscribed by an extramental quiddity or as having an extramental quiddity in Chapter 3; this brief description should suffice for now.²⁴⁷

Back to the three questions to be answered in a scientific inquiry described in *KH* 228-234: as I already said, first we ask, “whether X is” or “whether X is Y,” and “is” is used in these questions in the sense of being as true. We say yes to this question of “whether X is” just in case the idea of X is instantiated, i.e., there is something which is described as “X;” likewise, we say yes to this question of “whether X is Y” just in case what is described as “X” is also described as “Y.” After we answer the first ‘whether (*hal*)’ question affirmatively, we proceed to the second ‘whether (*hal*)’ question, but this time the relevant sense of *mawjūd* is being as having an extramental quiddity. So, we ask again “whether X is [*mawjūd*]” but this time, this question is normally²⁴⁸ answered affirmatively just in case there is a cause (*sabab*) which is other than X and by which X subsists (*bihi qiwāmuhu*). At first sight, it is not obvious how having a cause of subsistence relates to being as having an extramental quiddity. As I described this sense of being above, “X *mawjūd*” holds according to this sense just in case “X” picks out a real thing with respect to its quiddity. So, the answer to the question of “whether X *mawjūd*” according to this sense of being should be yes simply just in case “X” picks out a real thing in respect of its quiddity; from where does having a cause of subsistence come in? Although the limitation of space does not allow me to expand on this interesting point, it seems that al-Fārābī takes the following three propositions to be equivalent:

(P1) X has a divided quiddity.

(P2) X has a cause of subsistence (*qiwām*) (other than itself).

(P3) X is different from its being (*wujūd*).²⁴⁹

Moreover, the being (*wujūd*) of something which is (*mawjūd*) according to the sense of being as having an extramental quiddity is the quiddity of that thing as a whole or a part of its quiddity; if the quiddity of X is divided (i.e., X has a cause of subsistence and is different from its *wujūd*), its *wujūd* according to this sense of being is either its whole quiddity, or a part of its quiddity

²⁴⁷ For a more extensive discussion of the senses of being in *KH* that I follow here, see Menn, *Al-Fārābī’s Kitāb al-Hurūf*, 76-84.

²⁴⁸ I will talk about the exceptional way of understanding this question in the case of God below.

²⁴⁹ The equivalence of P1 and P2 is implied in *KH* 239, 241. The equivalence of P1 and P3 is implied in *KH* 89, 241.

(typically, its genus or its differentia, and its differentia more properly than its genus); if the quiddity of X is simple (i.e., X is uncaused (or self-caused) and is its *wujūd*), its *wujūd* according to this sense of being is simply its quiddity which is identical to itself.²⁵⁰ Moreover, the cause (or causes) of subsistence for X would be cited in its scientific definition, and it would be a part (or parts of) its quiddity.²⁵¹ So, if we consider something, X, which has a divided quiddity, “whether X *mawjūd*” is answered affirmatively just in case “X” picks out something in respect of its quiddity and its quiddity (or the formula of its quiddity, i.e., its definition) cites the cause (or the causes) of the subsistence of X. I will briefly discuss below how the second ‘whether’ question should be understood if we have something without a divided quiddity, i.e., it is uncaused (or self-caused) and is its *wujūd* = quiddity (sc. God).

The second ‘whether’ question is understood similarly in two-place cases. Again, let’s focus for now on something, X, which has a divided quiddity; “whether X is (*mawjūd*) Y” is answered affirmatively just in case X is *per se* Y; there is little doubt that this is how al-Fārābī wants to understand the second ‘whether’ question in two-place cases (see *KH* 230-4); since the *mawjūd* in the second ‘whether’ questions is supposed to be according to the sense of being as having an extramental quiddity, this supports the interpretation I suggested above that in the two-place cases of *mawjūd* in the sense of being as having an extramental quiddity, e.g., “X *mawjūd* Y” means, at least primarily if not simply, that X is *per se* Y.

We reviewed the first ‘whether’ question and the second ‘whether’ question. An affirmative answer to the first ‘whether’ question does not guarantee an affirmative answer to the second ‘whether’ question; so, in a scientific inquiry, raising the second ‘whether’ question is not pointless. Examples of an affirmative answer to the first question but a negative answer to the second question in one-place cases involve negation or privation (‘*adam*’) (*KH* 240 218.12-5), but as Menn suggests, they seem to involve accidental compounds too (e.g., white man).²⁵² Let me reuse my example above. Let’s fix our consideration to the context of a room where there is only

²⁵⁰ For the senses of *wujūd* corresponding to the three senses of *mawjūd* that al-Fārābī initially distinguishes, see *KH* 89; for a useful explanation of this passage, see Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 82-4.

²⁵¹ This idea goes back to Aristotle’s account of scientific definition in *APo* II.1-10: accordingly, the scientific definition of X (e.g., lunar eclipse) would cite its cause (the interposition of the earth between the sun and the moon); more on how al-Fārābī develops this and the related ideas in *APo* II, see Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 84-90.

²⁵² Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 80.

one human, Socrates. In this context, the first ‘whether’ question “whether the non-cat *mawjūd*” is answered affirmatively because there is indeed a non-cat in this room, namely, Socrates. However, the second ‘whether’ question “whether the non-cat *mawjūd*” is not answered affirmatively because the non-cat, under that description, does not have a quiddity and hence does not have a cause (or causes) of subsistence (which would be in its quiddity, if it had a quiddity). On the other hand, “whether the human *mawjūd*” is answered affirmatively in both of the ‘whether’ questions. As for the two-place cases, al-Fārābī spells out his own example in *KH* 232-3: assume that a white dog is under consideration; “whether the dog is white [*hal al-kalb abyad*]” is answered affirmatively according to the first ‘whether’ question but it is answered negatively according to the second ‘whether’ question because white is not *per se* predicated of the dog.

After we give an affirmative answer to the second ‘whether’ question in the one-place cases, we know that the thing at issue has a cause of subsistence; next we investigate what this cause is. So, after giving an affirmative answer to the second “whether X is” question, we ask “what (*mā*) X is” (equivalently “why (*lima*) X is”)²⁵³ and with this third question we investigate what is the cause (or causes) of subsistence for X which is (or are) in the quiddity of X. After we give an affirmative answer to the second ‘whether’ question in the two-place cases, we know, e.g., that X is *per se* Y, i.e., the quiddity of X (or the quiddity of Y) necessitates that X is Y. So the reason why X is Y is the quiddity of X (or the quiddity of Y). So, the third question “why is X Y” requests the knowledge of the quiddity of X (or of Y) as a whole or in part, which is the cause of X’s being Y.

I described the three steps in a scientific inquiry so far, but I skipped the inquiries that involve God, i.e., what has a simple quiddity, and is uncaused and is identical to his being (*wujūd*). The first ‘whether’ question will be similar; both in the one-place and the two-place cases involving God, this first ‘whether’ question is answered in the affirmative if this claim is true. In the two place cases, the second ‘whether’ and the following ‘why’ question is similar in the inquiries into God too: we say yes to the question of whether “God is Y” just in case God is *per se* Y; since God has simple quiddity, we will leave out cases where Y is *a part* of God’s quiddity but

²⁵³ See *APo* II.2 for the analogy between the one-place questions *ei esti* and *ti esti*, on the one hand, and the two-place claims *hoti* and *dioti*; this view is behind al-Fārābī’s thinking when he equates the ‘what’ question with the ‘why’ question.

otherwise, this will be similar to the inquiries into things other than God. Likewise, the ‘why’ question in the two-places cases in the inquiries into God will be similar; that said, the answer to these ‘why’ questions cannot be a part of God’s quiddity, as in the other inquiries, because God has a simple quiddity (*KH* 240).

In the one-place cases, though, the second ‘whether’ question has different satisfaction conditions in the inquiries into God than the satisfaction conditions in the inquiries into the caused things with divided quiddities. According to the understanding of the second ‘whether’ question we saw so far, “whether X is” is answered affirmatively just in case “X” describes an entity in respect of the cause of its subsistence which is other than itself. Since God does not have a cause of its subsistence (unless we want to say that he is his own cause), we should say no to this question of “whether God is” if the satisfaction condition of this second ‘whether’ question is in the way we described so far (*KH* 239). So, “whether God is [*mawjūd*]” would be answered affirmatively only if this is the first ‘whether’ question and the *mawjūd* here is taken in the sense of being as true. However, in their scientific inquiries, the philosophers in the Aristotelian tradition make assertions about the reality of God and they claim that he has a quiddity; so there should also be a way to answer the second ‘whether’ question about God in the affirmative because God is *mawjūd* according to the sense of being as having an extramental quiddity and this is the sense of being used in the second ‘whether’ question. Presumably for this reason, al-Fārābī says that there is another way to understand the second ‘whether’ question in the one-place cases: according to this other understanding, we say yes to the question of “whether X is” just in case X has an extramental quiddity. This is a strictly looser interpretation of the second ‘whether’ question; in other words, if we say yes in response to “whether X is” according to the first interpretation of the satisfaction condition of this question, we also say yes to it according to the second interpretation of the satisfaction condition of the question, but not the other way around because God does not have a cause by which he subsists but God has an extramental quiddity (*KH* 240). There will not be a following ‘what’ question in the one-place inquiries into God because God is uncaused and there is no cause to be identified.

In short, in a scientific inquiry with both the one-place and the two-place cases, first we ascertain the truth of a claim. Then, putting aside the inquiries into God (who has an undivided quiddity, is uncaused, and is identical to his being (*wujūd*)), we ask whether the claim refers to something or

a state of affairs in respect of the cause (or causes) of subsistence for the thing under consideration or the cause for this state of affairs to hold, which in both cases is the quiddity of the relevant thing under consideration or a part (or parts) of its quiddity. Next, we ask what this cause is or these causes are. Al-Fārābī explains in *KH* 235-8, these causes are whichever of the four traditional Aristotelian causes that pertain to the things that we want to explain. As mentioned above, al-Fārābī suggests in *KH* 16 68.12-4 and *KH* 236-7 that mathematics provides explanations in respect of the formal cause while natural science provides explanations in respect of all the four causes, or more precisely some or all of the four causes that are relevant for the phenomenon that is being explained. As explained above, this also agrees with the account in the *Attainment*.

Somewhat similar to the account of tracing up the causes from their effects presented in the *Attainment*, al-Fārābī describes the causal order of the real things in the first part of *KH*, although this account in *KH* is less detailed than the one in the *Attainment*. In his discussion of being (*mawjūd*) in the first part of *KH*, al-Fārābī argues in *KH* 92 that being as having extramental quiddity is not said univocally but by priority and posteriority (*bi-l-taqdīm wa-l-ta'khīr*). X is said to be more perfect in respect of quiddity than Y (*akmal māhiyyatan*) just in case X is the cause for Y's quiddity to obtain (*yaḥṣulu*) but not the other way around. Al-Fārābī asserts that if X is more perfect in respect of quiddity than Y in this sense, then X deserves to be called a being (*aḥrā an yusammā mawjūdan*) more than Y, and being in the sense of having an extramental quiddity is said of X by priority and of Y by posteriority. Al-Fārābī asserts that in general, the category of substance is more perfect in respect of quiddity than the accidental categories.²⁵⁴ Also, in the category of substance, some things are the causes for the others' quiddities to obtain. So, of two substances, X and Y, if X is more perfect in respect of quiddity than Y, then being is said of X by priority and of Y by posteriority. In this way, if we pursue what is less perfect in respect of quiddity to what is more perfect in respect of quiddity in the category of substance, in other words, if we move from something to another which is the cause for the former's quiddity to obtain, and if we keep going in this way tracing up the causes in the category of substance, we

²⁵⁴ For the claim that substance is said to be by priority while the accidents are said to be by posteriority, see, e.g., *Met.* Z.1 1028a10-20. Specifically for the argument that substance is prior to accidents because substance is in the definition of accidents (so substance is a constitutive part of the quiddity of accidents (and not the other way around)), see *Met.* Z.1 1028a32-6 and *Θ*.1 1045b27-32. This argument is also presented by al-Fārābī in *KH* 68 in his discussion of the senses of substance (*jawhar*); I say more on this below.

will reach the thing or the things in the category of substance which is or are the most perfect in respect of quiddity in the sense that they do not need anything else in the category of substance for their quiddities to obtain but everything else in the category of substance, directly or indirectly, need them for their quiddities to obtain. Finally, al-Fārābī argues that if we find something outside the categories and is the cause for the quiddities of this highest cause or these highest causes in the category of substance to obtain, this extracategorical thing would be the most perfect in respect of quiddity, and it would be the most deserving of being called a being (*mawjūd*). This extracategorical thing would be the cause for everything else's quiddity to obtain, directly for the highest causes in the category of substance, through them, for the other things in the category of substance, and through the things in the category of substance, for everything else in the remaining categories.²⁵⁵

We find an even briefer account of the causal order of the things in the third part of *KH*. As summarized above, al-Fārābī seems to hold that the following three claims are equivalent: X has a divided quiddity; X has a cause of subsistence (*qiwām*) (other than itself); X is other than its being (*wujūd*). Moreover, as mentioned above, al-Fārābī holds that if X has a cause (or causes) by which it subsists, this cause (or these causes) are in X's *wujūd* which is its divided quiddity. In *KH* 241, al-Fārābī describes a way of pursuing the causes of subsistence for something through the analysis of its quiddity; if we start from something, X, which has a cause of subsistence, and has a divided quiddity, its cause of subsistence will be cited in its quiddity; let's focus on this cause, Y: does Y have a cause of subsistence of its own, and has a divided quiddity, or not? If Y does not have a cause of subsistence of its own, we already obtained something which is uncaused (or self-caused) and has a simple quiddity and is identical to its *wujūd*. If not, then Y has its own cause of subsistence which is cited in the quiddity of Y. This time, we ask the same question about the cause of Y, say Z: does Z have a cause of subsistence of its own, and has a divided quiddity, or not? Al-Fārābī argues that this process of analysis (*taḥlīl*) where we breakdown the (causal) parts of a quiddity and then analyze the quiddities of those parts and so on must terminate at an uncaused part (or uncaused parts) with a simple quiddity because

²⁵⁵ Mahdi inserts هو السبب في ماهية at 119.6 for an apparent lacuna, but as Stephen Menn points out in n.32 in his *Al-Farabi's Metaphysics* that in Mahdi's unpublished later corrections to his edition of *KH*, Mahdi proposes a longer passage here whose English translation can be found in Menn, *Al-Farabi's Metaphysics*, Section 3.4 (see the passage between asterisks in a block quote that n.32 refers to). In any case, the meaning of the passage in both cases would more or less be as I summarized it above.

otherwise “it would go on without an end and the knowledge of the quiddity of the thing would not be obtained at all” (*KH* 241 219.14). Al-Fārābī does not identify what such things with simple quiddities are or what such a thing with a simple quiddity is in this paragraph, but in the surrounding passage, the only thing he mentions that has a simple quiddity, and is uncaused, and is identical to its *wujūd* is God. I will come back to this point again below when I discuss al-Fārābī’s characterization of the subject-matter of metaphysics in *KH* 17, which is one of my main aims in this section.

With all these being clarified, we are in a better position to make sense of the difficult details in *KH* 16 and then discuss the characterization of the subject-matter of metaphysics in *KH* 17 because, as we will see in greater detail below, natural science stops its scientific investigation when it sights the remotest causes which are outside the categories, and these causes are studied in metaphysics. Recall that prior to *KH* 16, al-Fārābī presents the subject-matters of logic, political science, and mathematics, and in *KH* 16, he presents the subject-matter of natural science. As reviewed above, he starts this paragraph by contrasting natural science with mathematics (at 68.6-14) in that mathematics considers quantities and the *per se* attributes of quantities in the other categories while natural science considers substances and their *per se* attributes in the other categories, and in that mathematics considers its objects only in respect of the formal cause while natural science considers its objects in respect of all the four causes. Next, al-Fārābī asserts,

T15 *KH* 16 68.14-69.3

والتعاليم لا يأخذ في ماذا <هو> كل واحد مما يعطي ماهيته أمور <ا> خارجة عن المقولات أصلا، وأما العلم الطبيعي فإنه يعطي أيضا في أسبابه أموراً غير²⁵⁶ خارجة عن المقولات. فإنه يعطي في الأمكنة التي سبيله أن يعطي فيها

²⁵⁶ I follow the ms. reading. Mahdi emends غير into <ها> because he thinks that al-Fārābī makes a contrast between mathematics and natural science in this passage starting from the very beginning: so, he wants al-Fārābī to say here that although mathematics does not grasp things which are outside the categories, natural science “presents [yu ‘īl]” things outside the categories. As I explain below, al-Fārābī contrasts natural science with mathematics, but his point is that even though, like mathematics, natural science “presents” things which are not outside the categories, unlike mathematics, natural science “attacks [hajama ‘alā]” things outside the categories. So, as I understand it, the ms. reading makes good sense and there is no need for Mahdi’s interventions indicated here and in the following footnote on the same ground.

الفاعل فاعلا غير خارج²⁵⁷ عن المقولات <وفاعل الفاعل، وفاعل فاعل> الفاعل^[258]، أو يرقى إلى أن يعطي غاية الغاية، وغاية غاية الغاية، حتى يروم المصير إلى حصول الغايات والأغراض التي <لها> كون ما تشتمل <عليه> المقولات. فإذا التمس أن يعطي ما هو كل واحد من أجزاء الأجزاء الماهية حتى يعطي أقصى ما يمكن أن يوجد في ماهياتها، هجم حينئذ على أسبابه معقولة خارجة عن المقولات وعلى أمور من أجزاء ماهيته هي خارجة عن المقولات، فهجم على أمور هي فاعلة خارجة عن المقولات وعلى أمور يعلم أنها غايات إلا أنها خارجة عن المقولات.

[1] [In the inquiries into] what anything whose quiddity [mathematics] presents [yu 'tī] is, mathematics does not grasp [ya 'khudhu] things outside the categories [khārīja 'an maqūlāt] at all. [2] As for natural science, [in the inquiries into] its causes [i.e., in its causal accounts], it too presents things which are not outside the categories. So in the contexts [fī al-amkina] in which [natural science] can present the efficient cause [al-fā 'il], it presents an efficient cause which is not outside the categories, and the efficient cause of the efficient cause and then the efficient cause of the efficient cause of the efficient cause [and so on] or [similarly] it climbs up presenting the final cause of a final cause [ghāya], and then the final cause of the final cause of the final cause [and so on], until [natural science] wants to get to [al-maṣīr ilā] obtaining the final causes or the aims [al-aghrād] for the sake of which everything comprehended by the categories exists [kawn]. [3] So if [natural science] seeks to present what each part of the quiddity [of something] is all the way up to presenting the remotest [aqṣā] of what can be in the quiddities [of these parts], at that moment [natural science] attacks [hajama 'alā] [this thing's] intelligible [ma 'qūla]²⁵⁹ causes outside the categories and [it attacks] things among the parts of its

²⁵⁷ The ms. has غير خارجة; Mahdi emends it into خارجا غير. As I announced in the previous footnote and explain further below, the context does not require an emendation of غير into غير، and the ms. reading makes good sense. As for خارجة in the ms., Mahdi emends it into خارجا for a grammatical reason (because he assumes that it modifies (فاعلا) while I emend it into خارج for a different grammatical reason (because it is the mudāfilayhi of غير and this adjectival phrase, غير خارج, modifies a singular noun, فاعلا).

²⁵⁸ The ms. has غير خارجة here right after المقولات عن غير خارج... and Mahdi excises it. The clause in the angular brackets is not in Mahdi but is added by me. Given that in Mahdi's version the transition into the final causes in the following clause connected with a disjunctive conjunction أو is not smooth, I think that some similar point about tracing the efficient causes of the efficient causes here fell out in the transmission of the text and something like what I add needs to be restored. I propose that this clause in the angular brackets that I add was left out by mistake by a copyist due to the repetition of the same word, and later on someone corrected the ungrammatical single الفاعل that was left into المقولات assuming that it modifies the preceding المقولات.

²⁵⁹ Here al-Fārābī talks about the highest causes of the things in the categories which themselves are outside the categories; as they are outside the categories, they cannot be perceptible, but rather they must be intelligible. That is why I translate ma 'qūla here specifically as "intelligible" as opposed to the more general sense it has in other contexts where I translated it as "thought." More on this more general sense of ma 'qūl, see Footnote n.240 above.

quiddity which are outside the categories; so it attacks things which are efficient causes outside the categories and things known to be final causes, which, however, are outside the categories.

In (1), al-Fārābī asserts that in its scientific explanations, mathematics does not “grasp” things outside the categories. In (2), he says that “also [*aydan*]” natural science “presents [*yu ‘īl*]” things which are not outside the categories. As we saw above in passing in my discussion of al-Fārābī’s *Book of Demonstration and Attainment*, in the contexts of describing scientific inquiries, “presenting” or “providing” (*a ‘īl - yu ‘īl*) is used in the sense of presenting a scientific account of something or providing a scientific explanation for something. Since, as we saw above, al-Fārābī says above in *KH* 16 that natural science studies things under the category of substance and other things which are *per se* attributes of these under the other categories, natural science provides scientific accounts of things under the categories, not outside the categories. The ms. reading of (2) that I follow above also expresses this idea. That said, there is also a contrast between mathematics and natural science in this passage. We are told in the rest of (2) that natural science traces higher and higher efficient and final causes in its domain. It is implied that this is still done under the categories, but it seems that natural science reaches the highest efficient and final causes under the categories and then it “wants [*yarūmu*] to get to obtaining the final causes or the aims for the sake of which everything comprehended by the categories exists” (my emphasis). Presumably these final causes or aims for the sake of which everything in the categories exist are outside the categories, and hence properly speaking fall outside the domain of natural science. This is why al-Fārābī seems to formulate it such that natural science “wants to get to [*yarūmu al-maṣīr ilā*] obtaining” them rather than simply saying that natural science “gets to [*yaṣīr ilā*] obtaining” them.

As summarized above, the causes of something are cited in its quiddity. So, seeking higher and higher causes of something can also be expressed in terms of the analysis of the parts of the quiddity of something. So, in (3) of T15, al-Fārābī presents seeking higher and higher causes of something in a scientific inquiry in terms of the analysis of the causal components of the quiddity of that thing. In this way, when natural science “seeks [*iltamasa*] to present” the highest or “remotest” causes of something by pursuing the analysis of its quiddity to the end, natural science “attacks [*hajama ‘alā*] its intelligible causes outside the categories and things among the

parts of its quiddity which are outside the categories” (my emphasis). These highest causes outside the categories that natural science “attacks” (but does not “present”) include the highest efficient causes outside the categories and the highest final causes outside the categories.

After T15, at 69.3-10, it seems that al-Fārābī talks about things which are parts of the quiddities of the things in the categories but are not separate (*ghayr mufāriq*) from these things. Al-Fārābī does not specify what these non-separate things are, and some details in this passage are not clear.²⁶⁰ Although, as we see in T16 which comes right after this passage, it appears that al-Fārābī still talks about things outside the categories (but are not separate from the things in the categories whose quiddities they are parts of), this is also not entirely clear from this passage. However, whether this passage is exclusively about the non-separate things outside the categories or it also includes the non-separate things outside the categories, as we see in T16 shortly, this passage cannot still be about the highest *efficient* and *final* causes al-Fārābī was talking about in T15 because in T16 al-Fārābī makes it clear that there are two kinds of things outside the categories: some are separate from the things in the categories they are the highest causes of, while others are not separate from the things in the categories they are the highest causes of, and the highest efficient and the final causes are separate:

T16 KH 16-17 69.10-21

وأما الفاعل والغاية فقد يكون خارج الشيء ومفارقاً له. فإذا كان كذلك فقد أعطى أقصى ما به ماذا الشيء – أي ما هو غير مفارق للشيء الذي يلتزم إعطاء ماهيته من أنواع²⁶¹ المقولات – وأقصى فاعل يكون مفارقاً له، وكذلك أقصى غاية له. فالعلم الطبيعي يهجم إذن عند نظره في المقولات على أشياء خارجة عن المقولات غير مفارقة لها بل هي منها، وعلى أشياء خارجة عنها ومفارقة لها. فعند هذه يتناهى النظر الطبيعي.

²⁶⁰ As I explain in what follows, this passage talks about things which are parts of the quiddity of X but are not separate from X while the highest efficient and final causes that al-Fārābī was talking about in T15 are separate from the things in the categories that they are the causes of. Nonetheless, the passage under consideration, as it is transmitted in the ms. seems to still talk about the highest efficient and final causes (it starts as *إلا أنها أجزاء ماهية الأشياء* ... (lines 3-4); the antecedent of the pronoun *ها* seems to be the highest efficient and the final causes outside the categories that al-Fārābī was talking about right before). So, an emendation seems to be needed here (perhaps *إلا أن <هنا> أجزاء ماهية الأشياء ...*, meaning “however, there are also parts of the quiddity of the things...” with the implication that al-Fārābī starts to talk about the parts of the quiddities of things in the categories other than the highest efficient and final causes he was just talking about). Also, I could not figure out what is the subject of the *كان* at lines 6, 8, 10.

²⁶¹ The ms. has *الأنواع المقولات* which does not make sense good sense. Mahdi adds *التي في* between *الأنواع* and *المقولات* in the ms.; I delete the definite article at the beginning of *أنواع*. I explain below two interpretations of this sentence; the first interpretation requires my emendation, but the second interpretation can also work with Mahdi’s emendation.

وينبغي بعد ذلك أن يُنظر في الأشياء الخارجة عن المقولات بصناعة أخرى وهي علم ما بعد الطبيعيات. فإنها تنظر في تلك وتستقصي معرفتها وتنتظر في ما تحتوي عليه المقولات من جهة ما تلك الأمور أسبابها – حتى في ما تحتوي عليه التعاليم منها والعلم المدني وما يشتمل عليه المدني من الصنائع العملية. وعند ذلك تنتهي العلوم النظرية.

[1] As for the efficient cause and the final cause, it is indeed [*qad yakūnu*] outside the thing and separate [*mufāriqan*] from it. [2] So if it is like this, [natural science] presents the remotest of that by which [*bihi*] what the thing [under consideration] is, i.e., what is not separate from the thing whose quiddity [natural science] seeks to present among the kinds of the categories [*anwāʿ al-maqūlāt*], [3] and [natural science presents] the remotest efficient cause which is separate from it, and likewise its remotest final cause. [4] So during its investigation [of the things] in the categories, natural science attacks, therefore, things which are outside the categories and not separate from them but rather they are from of them [*minhā*], and [it attacks] things outside of [the categories] and are separate from them. At this point, the natural investigation comes to an end.

[5] After this, the things outside the categories ought to be investigated by another art, and this is the science of metaphysics. For [this art, sc., metaphysics] investigates these [things outside the categories] and examine their knowledge (*tastaqṣī maʿrifatahā*), and [6] it investigates things contained by the categories insofar as these things are their causes [i.e., these things outside the categories are the causes of things in the categories], so that it investigates, among them [sc. the things under the categories], even those which are contained by mathematics and political science and those things from the practical arts [*al-ṣināʿiʿ al-ʿamaliyya*] comprehended by political science [*al-madanī*]. At this moment, the theoretical sciences [*al-ʿulūm al-naẓariyya*] come to an end.

I will discuss the details of the last part of *KH* 16 (which is (1)-(4) in T16) but let me first summarize T16 as a whole. Al-Fārābī asserts in (1)-(4) that natural science “attacks” the highest causes which are outside the categories (some of which are separate from their effects in the categories, others not) but natural science does not investigate these things outside the categories. Rather, we are told in T16 (5) that metaphysics investigates these things outside the categories; these things, which are outside the categories and are the highest causes of things in the categories and are the remotest causal elements obtained by the analysis of the quiddities of the things in the categories, are the things properly studied by metaphysics. So let me call them the

metaphysical things. Al-Fārābī adds in T16 (6) that as a secondary topic, metaphysics also investigates the things in the categories but insofar as the metaphysical things are their causes. So, in order to get clear on the subject-matter of metaphysics as presented in *KH* 17 (= (5)-(6) in T16), we need to clarify what these metaphysical things are. For this purpose, we should take a closer look at the last part of *KH* 16 which is (1)-(4) in T16.

The remotest or highest causes of the things in the categories which are the remotest (causal) parts obtained in the analysis of the quiddities of the things in the categories are themselves outside the categories, and as we see in (4), there are two groups of such things: the first group comprehends such extracategorical things which are not separate from their effects in the categories, or alternatively, from the things in the categories whose quiddities they are part of; the second group comprehends such extracategorical things which are separate from their effects. In short, there are two different characterizations of these things which natural science “attacks” and metaphysics studies: they are outside the categories, and they are the remotest causes of things in the categories, or alternatively, they are the ultimate (causal) parts obtained in the analysis of the quiddities of the things in the categories. I will discuss the related claims al-Fārābī makes in the rest of *KH* and in his other works about these two characterizations, i.e., (1) being outside the categories, and (2) being the remotest causes of things in the categories or alternatively being the ultimate parts in the quiddities of the things in the categories when their quiddities are fully analyzed into parts which cannot be analyzed further into causal parts. After this, I will discuss the division of these extracategorical remotest causes into those which are separate from the things in the categories and those which are not separate from the things in the categories on the basis of T16 and the other relevant passages in *KH*.

First, things outside the categories: al-Fārābī talks about things outside the categories both in the rest of *KH* and in other works. Al-Fārābī discusses the ways in which substance (*jawhar*) is said in *KH* 62-73. In *KH* 67, following Aristotle, al-Fārābī initially distinguishes three sorts of things said to be substances in philosophy: (1) perceptible things which are not in a subject (i.e., individual substances), (2) what makes known (*yu'arrifu*) the quiddities of the species of the individual substances and the constitutive parts of their quiddities (“that by which its quiddity and its subsistence is”) (e.g., the species of an individual substance), and more generally, (3)

what makes known the quiddities of the species in all the categories (including the accidental categories) and the constitutive parts of their quiddities.²⁶²

Al-Fārābī explains in *KH* 67-70 that the things in these three groups are called substances on account of satisfying one of the two or both criteria for substancehood. The first criterion is about non-dependence: each of the individuals and the universals in the category of substance are called substance simpliciter (‘*alā al-ṭlāq*’) because “for their quiddities and for that by which they subsist they do not need the rest of the categories [sc. the accidental categories] but the rest of the categories need this category [sc. substance] in order for their quiddities to come about for themselves because the quiddity of each thing [in the accidental categories] is certainly such that there is something from this category [sc. substance] in [the quiddity of that accidental thing]” (*KH* 68 101.13-16). In other words, if X needs Y in order for X’s quiddity to obtain (because Y (or its kind) is a constitutive part of the quiddity of X) but not the other way around, X is said to be substance (in relation to Y); generally speaking, the individuals and the universals in the category of substance are like this (with respect to the individuals and the universals in the category of accident). Strictly speaking, this criterion for substancehood is relationally defined, but presumably following the earlier tradition, al-Fārābī calls something a substance simpliciter if it satisfies this criterion (while those things which need them for their quiddities to obtain are called accidents).²⁶³ The second criterion is about predication in respect of what it is. If X is

²⁶² As al-Fārābī puts it, the first two cases derive from the primary and the secondary substances in *Cat.* 5 (*KH* 68 102.7-10). The third case, which is a generalization of the secondary substances in *Cat.* 5, is called a substance relative to something and conditioned by something (*muḍāf wa-muqayyad bi-shay’*), or it is called the substance for something (*li-shay’*). This case derives from what is called *ousia tinos* (or something similar) in *Met.*: see, for example, *Met.* Δ.8 (on substance), 1017b21-3: ἔτι τὸ τί ἦν εἶναι, οὗ ὁ λόγος ἐστὶν ὁρισμός, καὶ τοῦτο οὐσία λέγεται ἐκάστου (my emphasis).

²⁶³ Presumably al-Fārābī wants to call all and only the things that fall under the category of substance substance simpliciter, but it might appear from the criterion for substancehood simpliciter described above, some things in the accidental categories should also be called substances simpliciter. For example, it seems that some quantities are also substances simpliciter (with respect to some qualities like shapes) if it is the case that the quiddity of a shape cites some quantities (because a shape is always the shape of a two- or three-dimensional quantity) but the quiddity of these quantities do not cite any shape. That said, if we pursue such dependence relations in respect of quiddity among all the things in all the categories, we would see that such dependence relations bottom out in the things in the category of substance. In other words, even if we assume that the quiddity of some quality cites quantities, the quiddities of those quantities cite substances. The difference between an individual and a universal substance for al-Fārābī is not as big as it might seem from Aristotle’s *Categories*, because as al-Fārābī puts it, just like the individual substance, the universal substance is also called substance simpliciter “since it is the thought [*ma ‘qūl*] of the *mushār ilayhi* which is not in a subject [sc., an individual substance], and the thought of a thing is this very thing [*ma ‘qūl al-shay’ huwa al-shay’ bi-‘aynihi*], but its thought is this thing insofar as it is in the soul while the thing is this thought insofar as it is outside the soul” (*KH* 67 101.10-2). So, after all, an individual substance and a universal substance which is its thought are the same thing in some relevant sense, but in different states (with the extramental perceptible individual substance (*mushār ilayhi* which is not in a subject) being causally prior).

predicated of Y in respect of what Y is, X is called a substance for Y. Al-Fārābī calls such a substance a substance in relation to something (*muḍāf*) or conditioned by something (*muqayyad bi-shayʿ*) or a substance for something (*li-shayʿ*).

Since at the bottom of al-Fārābī's ontology for the world around us we have two kinds of perceptible things, the *mushār ilayhi* = *tode ti* which is not in a subject (i.e., individual perceptible substances) and the *mushār ilayhi* which is in a subject (i.e., individual perceptible accidents), we can rephrase the three groups of things which are said to be substances as follows: (1) the perceptible individual substances, (2) the universal predicates of these in respect of what they are, and more generally, (3) the universal predicates of any individual perceptible thing, be it a substance or an accident, in respect of what it is. Observe that the second group is simply a proper subset of the third group. So, with a proper division deriving from *Cat.* 2, we can partition all the things in the categories (i.e., perceptible individuals and their universals) into four: (I.a) individual perceptibles not in a subject, (I.b) their universals, (II.a) individual perceptibles in a subject, and (II.b) their universals. Things in the category of substance, i.e., (I.a) and (I.b) are substances simpliciter as described above, but things in (I.b) are also substances for something because they are predicated of things in (I.a) in respect of what they are. The accidental universals, i.e., (II.b) are only substances for something because they are predicated of things in (II.a), i.e., individual accidents, in respect of what they are. Finally, the individual accidents (II.a) are not said to be substances according to either criterion of substancehood (*KH* 70).

The criterion of non-dependence can be further fine-tuned. It seems that al-Fārābī interprets Aristotle's characterization of the "primary" and "secondary" substances in *Cat.* 5 in terms of his view that the universal substances are the thoughts in the soul of the individual substances which are outside the soul (*KH* 68 102.4-10; also see *KH* 67 101.9-12). For Aristotle, the primary substances are called primary apparently because everything else needs to be said of or be present in some primary substance as its subject but not the other way around (see *Cat.* 5, especially 2a34-b6). Moreover, it is asserted at *Cat.* 12 14b9-22 that the truth of a statement is causally posterior to the state of affairs described by the statement (even though the truth of the statement is simultaneous with the obtainment of this state of affairs). If this idea is generalized using the layered theory of representation sketched out at the beginning of *DI* 1, namely at 16a3-8 (i.e., the mental representations (*pathēmata tēs psuchēs*) are the natural likenesses

(*homoiōmata*) of real things (*pragmata*), and linguistic expressions are conventional signs (*sumbola*) of these mental representations, and writing is conventional signs of linguistic expressions), it seems that states of affairs are causally prior to their mental representations (and their mental representations to linguistic expressions, and spoken language to written language). It seems that al-Fārābī interprets the causal dependence of the universal substances on the individual substances according to *Cat.* 5 in terms of the causal dependence of a mental representation on the real thing it is the mental representation of, and in *KH* 68 he seems to explain why the individual substances are substances simpliciter to a greater degree than the universal substances using this idea. Yet, in *KH* 72, al-Fārābī seems to use the idea of the priority of the individual substances to everything else in *Cat.* 5 more directly. He suggests in *KH* 72 that the individual substances deserve to be called substances simpliciter more than the universal substances because the individual substances are subjects for everything else (universal substances are said of them and the accidents are present in them) but the individual substances themselves do not have subjects. Then, he seems to analogically strengthen this criterion of non-dependence for substancehood simpliciter: if not being predicated of anything (while being a subject for other things) expresses the sort of non-dependence required for substancehood, not being predicated of anything *and* not being a subject for anything seem to constitute a relevant sort of non-dependence to a higher degree; if such a thing exists, it would be a substance simpliciter to a higher degree than the individual substances because just as substances in general are “more perfect and firm in being [*akmal wa-awthaq wujūdan*]” than accidents (*KH* 68 101.19-20), and just as the individual substances are more perfect and firm in being than the universal substances (*KH* 68 102.4-10), what is neither predicated of anything or nor a subject for anything would be more perfect and firm in being than what is not predicated of anything (while being a subject for other things), i.e., the individual substances (*KH* 72 104.19-105.3). Al-Fārābī adds that “demonstration [*al-burhān*] makes it necessary that there exists an essence [*dhāt*] with this characterization; so, this is most deserving [*aḥrā*] to be called a substance and this is a substance outside the categories, since it is not predicated of anything and is not a subject for anything at all” (*KH* 72 105.3-5). This passage makes it clear that something is said to be outside the categories “since” it is not predicated of anything nor is it a subject for anything. This is an understandable claim: if a substance is a subject for other things and if an accident is predicated of other things, what is outside the categories, i.e., neither a substance nor an accident would

have neither of these features, i.e., it would neither be a subject for anything nor predicated of anything.

In the quoted passage (*KH* 72 105.3-5) al-Fārābī does not specify what this “essence” is but he uses the singular pronouns and nouns referring to such a thing and says that there is a demonstration of the existence of such a thing, without specifying how this demonstration would look like. Since this thing is most perfect and firm in being and is most deserving of being called a substance if we loosen our usual use of the term “substance” as referring to one of the categories and allow something outside the categories to be called a substance (*KH* 72 105.5-7, *KH* 73 105.11-4), and since, as we saw, al-Fārābī *does* think that there is a demonstration for the existence of God, it is likely that this thing is God. That said, the use of the singular pronouns and nouns in this passage does not necessarily mean that al-Fārābī means strictly that there is a single such thing: he clearly thinks that this is not the right place to elaborate on whatever has this feature, and he would probably also not think it appropriate to discuss here how many things have this feature. So, if we take into consideration al-Fārābī’s cosmological accounts in *MF* and *SM*, such things outside the categories (i.e., not perceptible particulars nor subsisting in perceptible particulars) which also deserve to be called substances to a degree higher than the perceptible substances and their universals might be, besides God, the separate intellects of the heavenly bodies, and the Active Intellect. In short, the extracategorical thing described in *KH* 72 seems to be *primarily*, if not *exclusively*, God, but the seconds and the Active Intellect might also be extracategorical.

Apart from *KH*, al-Fārābī mentions what is outside the categories in *KW* and the *Philosophy of Aristotle* too. As will be detailed in Chapter 3, al-Fārābī thinks that the sense of unity by virtue of being circumscribed by a quiddity applies to everything. To stress this point, he says that this sense of unity “is said of all the categories and of any perceptible individual thing [*mushār ilayhi*] and of other things outside the categories – if indeed there are such things” (*KW* 17 51.11-2 = 50.5-6).²⁶⁴ As in the *KH* passages reviewed above, al-Fārābī does not specify what such extracategorical things are, and he uses a reserved language about their existence (“if indeed there are such things”). Al-Fārābī uses a similarly reserved language about the existence of what

²⁶⁴ Also compare, a few lines below at *KW* 18 52.1-2 = 50.8: “[the one according to some sense] can hold of things separable from matter [*mādda*], if [such things] exist [at all].”

is outside the categories in *KH* too. It is true that, as quoted above, at *KH* 72 105.3 al-Fārābī asserts that “demonstration makes it necessary that there exists an essence with this characterization,” but at *KH* 73 105.13, talking about the same extracategorical thing (or things), he uses a more reserved language: “... *if* it is demonstrated that there is something in this condition [*bi-hādhihi al-ḥāl*]” (my emphasis). We know that al-Fārābī thinks that the very likely candidates for extracategorical things (i.e., God, and maybe also the separate intellects of the heavenly bodies, and the Active Intellect) exist and we can demonstrate their existence. So, it does not seem to be accidental that he shows extreme caution in these passages about the existence of the extracategorical things and reluctance in specifying what they are. Instead, this caution and reluctance seem to reflect the fact that al-Fārābī pursues some sort of methodological purity in not elaborating on such things in *KH* and *KW*. Al-Fārābī probably thinks that a proper scientific accounts of such things should first provide a demonstration of their existence, and then proceed to investigate their attributes (and, e.g., verify that God and maybe also the other theological or divine things (*umūr ilāhiyya*) are outside the categories). Since apparently al-Fārābī did not think that *KH* and *KW* are the right place to demonstrate the existence and the features of such things but a theological account would be the right place to do so (as in the ‘way-up’ of theology sketched out in the previous section, and at least for their attributes, as in the way-down of theology presented in *MF* and *SM*), it seems that if *KH* and *KW* are works of metaphysics, since they do not contain theological accounts, they must contain ontological accounts. I will provide further evidence for the claim that *KH* and *KW* contain ontological accounts below. For now, let me note that this methodological purity perhaps goes a bit too far when al-Fārābī expresses non-commitment about the existence of such things in *KH* and *KW* even though there is no doubt that he thinks that God and the other theological or divine things exist.

Al-Fārābī mentions the extracategorical things in the *Philosophy of Aristotle* too and this time he is more specific about what they are. As summarized in Section 5 above, in describing the passage from natural science into metaphysics, al-Fārābī indicates that we should investigate whether the heavenly bodies have “a nature or a soul or an intellect or something else more perfect than these, but these things are outside the natural investigation [*al-naẓar al-ṭabīʿī*], for natural investigation contains only what the categories contain. It has become clear that there are other beings [*mawjūdāt*] outside the categories, sc., the Active Intellect, and the thing that

supplies the heavenly bodies with perpetual circular motion” (99 p.130 lines 9-14). So, as we saw above in my discussion of *KH* 14, 16-7, natural science studies things in the categories while metaphysics studies things outside the categories. As explicitly stated in this passage, the things outside the categories studied by metaphysics (and although not mentioned here, we can specify that in the theology part of metaphysics) are the Active Intellect and “the thing that [*alladhī*] supplies the heavenly bodies with perpetual circular motion.” As discussed in Section 5, also in an earlier passage in the *Philosophy of Aristotle* (34), again describing the passage from natural science into metaphysics, from the heavenly bodies to their causes, al-Fārābī speaks of “the thing which [*alladhī*] gives these outermost bodies [*tilka al-ajsām allatī fī al-aqṣā*] [their] circular motion” in the singular, but, as I argued there, these expressions do not provide strong reasons to assume that in the *Philosophy of Aristotle* account al-Fārābī thinks that there is only a single mover of all the heavens (in contrast with Aristotle’s claim in *Met.* Λ.8 that there are multiple unmoved movers of the heavens, but one first unmoved mover).

As I explained in Section 5, the theological things in the *Philosophy of Aristotle* are the Active Intellect, the prime unmoved mover (and presumably also the other unmoved movers of the heavens), while the theological things according to al-Fārābī’s considered views in theology in *MF*, *SM* (and *On the Intellect*) are the Active Intellect, the separate intellects of the heavens, and God. I take it that the claim in the *Philosophy of Aristotle* that the theological things, i.e., the highest causes of natural things which are not studied by natural science but by metaphysics, are outside the categories is meant to apply to such highest causes even if they are identified differently in al-Fārābī’s considered views in theology.

Although al-Fārābī explicitly identifies the theological things as the things outside the categories in the *Philosophy of Aristotle*, he does not explain why the theological things are outside the categories (i.e., on what ground we think that the theological things are neither subjects nor predicates for other things) in the *Philosophy of Aristotle* either. This is presumably because the *Philosophy of Aristotle* presents an overview of the network of sciences embedding Aristotle’s works in this network and is not the right place to present a detailed theological discussion.

Al-Fārābī seems to imply that the first, i.e., God is not a subject nor a predicate in *MF* Ch.1 1 58.1-5 and he explains that God is not composed of matter (or subject) and form, but he does not directly explain why God himself as a whole is neither a subject for something else nor a

predicate for something else. Even though *MF* and *SM* contain al-Fārābī's own views in the theology part of metaphysics, as mentioned in Section 5 above, *MF*, and also *SM* insofar as it shares with *MF* its content and structure, are not written as technical works in metaphysics to fully spell out and justify al-Fārābī's metaphysical views. We can articulate some reasons that al-Fārābī could provide if he was asked why he says that *God* is not a subject nor a predicate. Since God is the first, God is uncaused and does not depend on something else, and we can infer from this, following al-Fārābī, that God is identical to his quiddity. Now, al-Fārābī clearly thinks that some things are correctly predicated of God. First, God is identical to his quiddity (since he is uncaused) and in some trivial sense his quiddity is predicated of God. Also, as I briefly mentioned above, God has some *per se* attributes, i.e., the predicates whose belonging to God is necessitated by God's quiddity (e.g., all-knowing is predicated of God) (even though these *per se* attributes should not be understood as generating a multiplicity in God). So, if we want to maintain that God is not a subject for something else, we should take this to mean that God is not a matter for something or that God cannot have an accidental predicate.²⁶⁵ If God were a matter for something, it would be contingent that God has that feature. Likewise, if God could have an accidental predicate, it would be contingent that God has that feature. So, it would not be necessary from God's own essence that God would have that feature; therefore, it would be possible for there to be a cause which is responsible for God's having that feature. So, it would be possible that God is not uncaused.

Insofar as this argument turns on God's being uncaused, this argument cannot also explain why the other theological things (sc., the separate intellects of the heavens, and the Active Intellect) are outside the categories because only God is uncaused. That said, Aristotle seems to hold in *Met.* that Aristotle's 'theological things' (sc. the unmoved movers of the heavens) are pure actualities and they self-subsist and al-Fārābī follows Aristotle in holding that his theological things have these two features. So, assuming that we independently showed that al-Fārābī's theological things are pure actualities and that they self-subsist, using these two features, we can supply some reasons to explain why al-Fārābī might think that they are neither subjects for other things nor predicates for other things. If any of them is predicated of a subject, it would not be

²⁶⁵ I think being a matter for something and being able to receive an accidental attribute are equivalent in the relevant contexts, but I am not going to defend this here in the interest of space, and their equivalence is not necessary for the point I make above.

self-subsisting. On the other hand, to show that none of them is a subject for something else, we need to qualify this claim. These theological things clearly have *per se* attributes both in the way that rational is a *per se* attribute of human and in the way that risible is a *per se* attribute of human. Unlike God, these other theological things are caused, so have divided quiddities, and their quiddities and parts of their quiddities are *per se* predicated of them (like rational of human), but they also have some *per se* attributes in the other way, the attributes which are not part of their quiddities but their quiddities necessitate that such attributes belong to them (like risible of human). So, we should understand the claim that these theological things are not subjects for other things to mean that these theological things are not matters for other things or that they cannot have accidental predicates. If so understood, we can supply a reason for this claim. Insofar as these theological things are pure actualities, they do not have any potentiality. But if something is a matter for a feature or if something can have an accidental feature, it seems that it would have a potentiality for receiving that feature.

Recall that the things that natural science “attacks” and metaphysics studies are outside the categories, and they are the remotest causes and the remotest parts of the quiddities of the things in the categories. We clarified that something is said to be outside the categories because it is neither a subject for anything nor is it predicated of anything (and apparently this first claim should be understood to mean that it is not a matter for something or that it cannot have an accidental predicate). We also clarified that at least and primarily God is outside the categories, and perhaps also the other theological things are outside the categories (namely, the separate intellects of the heavenly bodies, and the Active Intellect). Al-Fārābī seems to suggest in *KH* 92 that what is outside the categories is also the remotest cause. As I summarized above, al-Fārābī explains in this paragraph that the sense of being by virtue of being circumscribed by an extramental quiddity (or simply, by having an extramental quiddity) is said by priority and posteriority. If X is the cause of Y’s quiddity to obtain but not the other way around, X is said to be more perfect in respect of quiddity than Y, and X is said to be *mawjūd* in this respect by priority and Y by posteriority. In this way, things in the accidental categories are posterior to things in the category of substance. If we pursue up the causal order in the category of substance, al-Fārābī says that we would reach the highest cause or the highest causes *within* the category of substance and “this one thing or these things deserve to be called a being [*mawjūd*] more than the other things [in the category of substance]” (119.3-4). So, we have a single highest cause in the

category of substance or we have several highest causes in the category of substance. But this is not the summit of the causal order. Al-Fārābī adds that “if we encounter something [*shay*] which is outside all these categories and is the cause for the quiddity of whatever is the most prior thing in this category [sc. substance] to obtain” this extracategorical highest cause would also be the cause of the remaining things in the category of substance through the highest cause (or the highest causes) in the category of substance, and this extracategorical highest cause would also be the cause of the things in the accidental categories through the things in the category of substance. In other words, since it does not seem that al-Fārābī considers some other extracategorical thing in this passage, this extracategorical thing is the remotest cause of everything else, and everything else is either in the category of substance or in the accidental categories. It stands to reason that this extracategorical remotest cause of everything is God, but then it seems that the other theological things are not extracategorical. In fact, it seems that these other theological things are described here as the highest causes in the category of substance.

So, according to *KH* 92, there seems to be only one extracategorical thing which is the remotest cause of everything, and this is God. Since, according to *KH* 16-7, natural science “attacks” whatever is extracategorical and metaphysics studies it, it seems to follow from *KH* 92 metaphysics only studies God. This does not seem to be the whole story, though. In the review of the subject-matters of the theoretical sciences in the third part of *KH* in connection with the three steps of the scientific investigation described above, al-Fārābī states in *KH* 238 that “the divine science [*al-‘ilm al-ilāhī*]” studies “God [*al-ilāh*] and the divine things [*al-ashyā’ al-ilāhiyya*].” So according to *KH* 238, metaphysics studies God and some other “divine things” (presumably the separate intellects of the heavens and the Active Intellect); since according to *KH* 16-7, metaphysics studies extracategorical things, if two accounts are coherent, these divine things should also be extracategorical.

As I mentioned above, in *KH* 16-7, we seem to have two characterizations of the things studied in metaphysics: they are outside the categories, and they are the remotest causes of the things in the categories or alternatively they are the ultimate parts obtained by the analysis of the quiddities of the things in the categories. As summarized above, in *KH* 241, al-Fārābī presents a short account of pursuing up the causes of something by way of analyzing its quiddity. If we start from the quiddity of something which is caused, the causes of its subsistence would be cited as

parts in its quiddity. These causes themselves are also caused or not. If they are caused, this time, we can analyze their quiddities and identify their causes as being cited in their quiddities. We cannot go on indefinitely in this way because otherwise the quiddities of such things would not be known completely. So, this process of analysis must terminate at things which have undivided quiddities, in other words, at things which are uncaused and are identical to their being (*wujūd*). As mentioned above, in the immediate context of *KH* 241, only God is named as such a thing with a simple quiddity. However, when al-Fārābī talks about the things with undivided quiddities which are the same as their being (*wujūd*), i.e., their undivided quiddity in *KH* 89, he mentions two groups of things: all the highest genera (*al-ajnās al-‘āliya*), i.e., the categories themselves (the category of substance, as the highest genus of all substances, the category of quantity, as the highest genus of all quantities, etc.)²⁶⁶ and “what is not in a subject, and not a subject for something at all, for it has an undivided quiddity eternally” (117.8-13). We know that God is the only thing in the second group because the other theological things are not uncaused, so they have divided quiddities. Now, al-Fārābī does not say that the categories themselves are outside the categories, i.e., not predicated of a subject nor a subject for something else because each category as a highest genus is indeed predicated of everything in that category. However, since the categories have undivided quiddities, they are in a way among the remotest causes of things in the categories because if we keep analyzing the (causal) parts of the quiddities of the thing in the categories, it seems that in addition to God, we will also obtain the categories themselves because they also have undivided quiddities.

²⁶⁶ It seems that al-Fārābī says that the categories themselves have undivided quiddities on the assumption that if something has a divided quiddity, the parts of its quiddity would be expressed as parts of its definition, but a definition is composed of a genus and a differentia and the highest genera do not have such definitions. Aristotle’s claim at *Met.* Δ.3 1014b9-10 apparently talking about the categories themselves that “... the so-called genera are universal and indivisible for there is no *logos* of them [τὰ καλούμενα γένη καθόλου καὶ ἀδιαίρετα (οὐ γὰρ ἔστι λόγος αὐτῶν)]” can also be taken to express a similar idea. However, as mentioned above, Aristotle holds that accidents have substance in their definition and al-Fārābī also holds this too. As briefly explained above, al-Fārābī argues that the category of substance is prior to the accidental categories in the sense that substance is the cause for the quiddities of accidents to obtain. This might entail that the quiddity of an accidental category itself also cites the category of substance as its cause, and hence must be divided. Moreover, all the substances are caused ultimately by God. So the quiddities of all the substances cite God as their ultimate cause. This might entail that the quiddity of the category of substance itself also cites God as its cause, and hence must be divided. That said, perhaps al-Fārābī would say in response that, e.g., each individual or universal quantity under the category of quantity have substance cited in its quiddity as its cause, but the category of quantity itself does not, and hence the category of quantity can have an undivided quiddity. Likewise, he would perhaps say that each individual or universal substance under the category of substance have God cited in its quiddity as its cause, but the category of substance itself does not, and hence the category of substance can have an undivided quiddity.

According to *KH* 16-7, the things studied by metaphysics have two characteristics and we expect these two characterizations to concur in the things studied by metaphysics: being extracategorical and being the remotest causes of the things in the categories or alternatively being the remotest parts of the quiddities of the things in the categories. It turns out that the categories themselves satisfy the second characterization. They do not satisfy the first characterization because the categories themselves are not outside the categories; but they are not in the categories either. So perhaps as a boundary case, the categories themselves might also be considered along with the extracategorical thing or things.

So far we have identified two groups of candidates for the things studied by metaphysics according to *KH* 16-7. First, the theological things: primarily God, and perhaps along with God, the other theological things too. Second, if we understand the extracategoricity requirement somewhat loosely, the categories themselves as the highest genera might also be included among the things studied by metaphysics. So, either metaphysics has a theology part only, or it also has a light ontology part in which we only study the categories, i.e., the kinds of a sense of being according to *KH* 88, or simply the kinds of being in *On the Aims* as quoted in T5 above. That said, we might perhaps understand the characterizations of the subject-matter of metaphysics in *KH* 16-7 to include also more broadly all the things studied by ontology which are, according to T1 and T5 from *On the Aims*, the general attributes, i.e., being and unity, their opposites, non-being and multiplicity, their kinds, and their *per se* attributes (*lawāḥiq*). Although not explicitly mentioned or directly suggested in the passages in *KH* as the ones discussed above, these general attributes studied by ontology might be considered to be outside the categories and among the ultimate parts of the quiddities of the things in the categories. First, in *On the Aims* 36.2-9 which is quoted as T4 above, al-Fārābī reviews the subject-matters of metaphysics to explain why only this science should be called metaphysics (‘*ilm mā ba‘da al-ṭabī‘a*’), i.e., the science of what comes after nature. Mathematics is also “above [*a lā*]” natural science because its objects are abstracted from matter (and from natural things since natural things subsist in matter), but they are abstracted only in imagination (*wahmī*) not in being (*wujūdī*) or in reality (*ḥaqīqī*). By contrast, al-Fārābī explains in T4 that the subject-matters of metaphysics as a whole are separated from matter and natural things in reality, not only in imagination. In (1) of T4, he explains that the things studied by the theology part of metaphysics are separate from matter in reality, not only in imagination. In (2) of T4, he explains that the general attributes studied by the

ontology part of metaphysics, like being and unity, are also separate from natural things in some sense: these general attributes are not separate from matter and natural things in the way that the theological things are because the theological things self-subsist but the general attributes like being and unity are not self-subsisting as Aristotle implies in the 11th aporia of *Met. B* that Plato, the Pythagoreans, and the Eleatics hold (*Met. B.4* 1001a4-b25). However, these general attributes are also not like mathematical objects. The mathematical objects are also not self-subsisting; a mathematical object subsists *entirely* in its subjects which are natural things, and it does not “come apart from [the natural things] [*yata ‘arrā ‘anhā*]” (36.6). By contrast, the general attributes like being and unity belong “both to the natural things and the unnatural things, be it the entities which are separate [*mufariqa*] in reality or [only] in imagination” (36.6-7). In other words, the general attributes studied by ontology belong both to the natural things and to the unnatural things which are separate in reality and are studied by the theology part of metaphysics as well as the unnatural things which are separate only in imagination and are studied by mathematics.²⁶⁷ So these general attributes *do* come apart from (*tata ‘arrā ‘an*) natural things in the sense that they do not subsist *only* in natural things. Since it seems from *KH* 14 and 16 that natural science studies all the substances (insofar as they have a principle of motion and rest in themselves *qua* themselves) and virtually all the accidents under the categories, this would mean that the general attributes studied by the ontology part of metaphysics are not in the categories, and except for the kinds of a sense of being, the general attributes studied by ontology are not the categories themselves either. So, in a sense, these general attributes are outside the categories.²⁶⁸

These general attributes are also in a sense among the remotest parts obtained by the analysis of the quiddities of the things in the categories. These general attributes are not *causal* parts of the quiddities of things in the way, e.g., that the theological things are, but they would still figure in the definitions of things which are the formulae (*logoi = aqāwīl*) denoting their quiddities.²⁶⁹ To

²⁶⁷ That said, as I mentioned in Section 5 above, in the *Book of Demonstration*, al-Fārābī seems to suggest that numbers belong both to the material things studied by natural science and the immaterial things studied in the theology part of metaphysics (while geometrical objects belong only to material things). Since, as explained in Section 5 from the *Book of Demonstration* and the *Attainment*, al-Fārābī holds that arithmetic is prior to geometry because geometrical objects can be considered both as numbered and not numbered, it seems that numbers belong to other mathematical objects too. So, it seems that just like the general attributes studied by ontology (being, unity, etc.), numbers also belong to natural things, mathematical things, and theological things.

²⁶⁸ The relevance of this passage from *On the Aims* for this issue was brought to my attention by Menn, *Al-Farabi's Metaphysics*, Section 2.

²⁶⁹ See Chapter 2 Section 1 Footnote n.318 below for the passages in Aristotle and in al-Fārābī in which definitions are characterized in this way.

put it briefly, the terms for these general attributes do not refer to any extramental entity or extramental feature (but only to a second thought (*ma 'qūl thānin*), i.e., a thought of a thought) or they do not refer to extramental real entities or features of the world *apart from* the extramental real entities or features of the world which are already named by the categorematic terms (for ease of reference, I also consider the terms that name the theological things (“God”, “Active Intellect” etc.) categorematic terms even though these things are outside the categories). For example, as I briefly mentioned above, there are two main senses of being (*mawjūd*); being as true and being as having an extramental quiddity. “X *mawjūd*” according to the first sense simply means that the mental representation of X is instantiated. So “*mawjūd*” here seems to refer to a second thought, or more specifically, a relation between a mental representation and an extramental entity or feature.²⁷⁰ “X *mawjūd*” according to the second sense does not describe anything about X apart from the fact that it is something with an extramental quiddity, and it with its quiddity is named by a categorematic term (e.g., “human [*insān*];” if we want to emphasize the quiddity of a human in abstraction we can also use “humanity [*insāniyya*]”). We will see in the following two chapters that “*wāḥid*” according to its various senses does not describe any additional extramental entity or feature which is not already named by a categorematic term. Presumably, similar things can be said about the kinds of non-being and multiplicity and the *per se* attributes of being, unity, non-being, and multiplicity.

Strictly speaking, the cause of the subsistence of something must be an extramental real entity or feature of the world; such causes are cited in the quiddity of the thing (or to put it more strictly, the phrases that refer to these causes in respect of their essence (e.g., their names or definitions) are part of the sufficiently articulated definition of the thing). So the general attributes like being and unity fail to refer to a cause of the subsistence of the thing at all or they fail to refer to a cause of the subsistence of the thing that is not already named by a categorematic term; in particular, such general attributes are not in the quiddities of things as their genera, strictly speaking (in agreement with Aristotle’s claim that being and unity are not genera of things (see, e.g., *Met.* B.3 998b22-7, also implied at H.6 1045b5-6)). Yet, fully articulated definitions of things will contain the one-place or the two-place uses of ‘is’, references to something’s being

²⁷⁰ Al-Fārābī does not say in *KH* that *mawjūd* as true is a second thought, but given his characterization of this sense of *mawjūd*, it seems reasonable that al-Fārābī would consider it a second thought: more on this, see Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 81.

one in some sense, or something's being a cause or an effect, or something's having an act potentially or actually, something's being the same as or the opposite of another and so on. More concretely, take the definition of a living being: it contains reference to some vital functions of this living being and since the living being does not have to actively perform these functions always in order for it to be what it is, its definition will cite the power or potentiality to perform these functions. Recall that potentiality and actuality as a pair are among the *per se* attributes of being according to T1 and T5 in *On the Aims*. In short, it appears that when we fully analyze the quiddity of something in the categories and fully articulate its definition accordingly, the definition will contain words or phrases that name some entities or features of the extramental world which are uncaused and whose quiddities are not divided; these entities or features of the extramental world with undivided quiddities are the categories (if the categories indeed have undivided quiddities as al-Fārābī claims in *KH* 89) and God. As I will say more about these below,²⁷¹ after the complete analysis of the quiddities of the things in the categories, their fully articulated definitions will also contain words which are not categorematic terms, and some of these non-categorematic terms signify the general attributes studied by the ontology part of metaphysics. So, in some sense, these general attributes are also among the ultimate parts of the quiddities of the things in the categories, and since these general attributes are also in a sense outside the categories, they might be included in the subject-matter of metaphysics as described in *KH* 16-7.

So, pursuing the account in *KH* 16-7, we ended up having three groups of candidates for the things natural science “attacks” and metaphysics studies. First, the theological things: of these God is certainly included in the things studied by metaphysics; the other theological things (the separate intellects of the heavens, and the Active Intellect) seem to be included in the things studied by metaphysics in some passages in *KH*, but there are also other passages which seem to include only God. Moreover, we saw that al-Fārābī says that the categories themselves have undivided quiddities. So, the categories themselves as the highest genera of the things in the categories are among the remotest parts of the quiddities of the things in the categories. So, if we tolerate taking the categories themselves as the boundary cases of the things outside the

²⁷¹ From Menn's discussion of in what sense *KH* (especially Part I) is both a study of the general attributes of ontology which takes *Met. Δ* as its model and a study of (some) particles (*hurūf* in Arabic) in his *Al-Fārābī's Kitāb al-Hurūf*, 64-71.

categories, they would also be included in the things studied by metaphysics. Finally, in a sense the general attributes studied in the ontology part of metaphysics as a whole are outside the categories; if we understand the remotest parts of the quiddities of the things in the categories a bit loosely to include their parts which are not causes of those things strictly speaking, these general attributes would also be among the remotest parts of the quiddities of the things in the categories. So, these general attributes might also be included in the things studied by metaphysics.²⁷²

As stated in T16, these extracategorical things that natural science “attacks” and metaphysics studies come in two kinds: those which are not separate from the things in the categories, and those which are separate. First, for ease of discussion, let me reproduce the end of *KH* 16 from T16:

T16 (1-4) *KH* 16, 69.10-6

وأما الفاعل والغاية فقد يكون خارج الشيء ومفارقاً له. فإذا كان كذلك فقد أعطى أقصى ما به ماذا الشيء – أي ما هو غير مفارق للشيء الذي يلتزم إعطاء ماهيته من أنواع المقولات – وأقصى فاعل يكون مفارقاً له، وكذلك أقصى غاية له. فالعلم الطبيعي يهجم إذن عند نظره في المقولات على أشياء خارجة عن المقولات غير مفارقة لها بل هي منها، وعلى أشياء خارجة عنها ومفارقة لها. فعند هذه يتناهى النظر الطبيعي.

[1] As for the efficient cause and the final cause, it is indeed [*qad yakūnu*] outside the thing and separate [*mufāriqan*] from it. [2] So if it is like this, [natural science] presents

²⁷² Bertolacci interprets the primary subject-matter of metaphysics in *KH* 17 as “the things external to the categories (possibly ‘existent’ and ‘one’, the so-called ‘transcendentals’)” (*The Reception of Aristotle’s Metaphysics*, 100). So, he inclines towards the view that the extracategorical things studied by metaphysics as described in this passage are *only* the general attributes studied by ontology. He expresses a qualified endorsement of this view further down in his book: “A purely ontological account of metaphysics occurs only, if anywhere, in the brief and somehow obscure mention of this discipline in [*KH*]” (*The Reception of Aristotle’s Metaphysics*, 102). Interpreting *KH* 17 and the surrounding passages, Menn suggests that according to these passages metaphysics is “about the categories themselves (especially substance) and about syncategorematic or transcendental concepts such as being, unity, essence, cause, and also God” (*Al-Fārābī’s Kitāb al-Ḥurūf*, 68). This is very close to the view I presented above; I would only add that the other theological things might also be included, and the inclusion of the general attributes studied by ontology as a whole in the subject-matter of metaphysics as described in *KH* 17 and the surrounding passages does not have as strong a textual support in the rest of *KH* as the inclusion of God (and maybe also the other theological things) in the subject-matter of metaphysics as described in these passages. That said, even if this description of the subject-matter of metaphysics restricts it only to the theological things, it would not be an outlier in al-Fārābī’s corpus because as presented in Sections 4-5, al-Fārābī describes the subject-matter of metaphysics as if it consists only of the subject-matter of its theology part in other works, and in doing so, he follows a late antique Greek tradition. Nonetheless, as I mentioned above and briefly address again below, a description of metaphysics as primarily dealing with theological things does not need to be taken to mean that the ontology part should be left out of metaphysics; this is because ontology supports theology.

the remotest of that by which [*bihi*] what the thing [under consideration] is, i.e., what is not separate from the thing whose quiddity [natural science] seeks to present among the kinds of the categories [*anwā* ‘*al-maqūlāt*], [3] and the remotest efficient cause which is separate from it, and likewise its remotest final cause. [4] So during its investigation [of the things] in the categories, natural science attacks, therefore, things which are outside of the categories and not separate from them but rather they are from them [*minhā*], and [it attacks] things outside of [the categories] and are separate from them. At this moment, the natural investigation comes to an end.

It is stated in (1) that the efficient and the final causes of something are separate from that thing, and it is stated in (3) that the highest efficient and the highest final causes are separate from their effects in the categories. During his discussion of scientific inquiry in the third part of *KH* summarized above, in *KH* 237 al-Fārābī states explicitly that the efficient and the final causes of the things studied by natural science are outside (*khārij min*) of that thing, while he implies that the formal and the material causes are “in the thing itself [*fī al-shay’ nafsihi*].”²⁷³ Although “outside of” does not necessarily mean “separate from (*mufāriq*)” and “in the thing itself” does not necessarily mean “not separate from” but it seems that in these contexts they mean the same thing. So, the remotest efficient and final causes seem to be the separate extracategorical things, and the remotest formal and material causes should be the non-separate extracategorical things.

Recall that so far our best candidates for the things outside the categories are God (and perhaps also the other theological things), the categories themselves, and perhaps more generally all the general attributes studied by ontology. It stands to reason that of these, God (and the other theological things if they are also included) are the remotest efficient and final causes.²⁷⁴

It turns out to be more challenging to draw as clear a picture of the non-separate extracategorical things mentioned in T16. Our remaining candidates for the extracategorical things studied by metaphysics are the categories themselves and perhaps more generally all the general attributes

²⁷³ More on the efficient and the final causes’ being outside the thing and the formal and the material causes’ being in it, see Section 3 Footnote n.157 above.

²⁷⁴ Despite all the differences, al-Fārābī’s ultimate model for the theological things and how they are the causes of other things is Aristotle’s *Met. A*. As briefly mentioned in Section 3 Footnote n.157, in *Met. A* the movers of the heavens are unmoved movers; so they are the efficient causes of the eternal circular motions of the heavens as the final causes, i.e., in the way that the object of desire is the starting-point of a motion (*archē kinēseōs*) or the moving (cause) (*to kinoun*) of a motion for attaining this object of desire, i.e., the efficient cause of this motion, and the object of desire is its efficient cause by being its final cause (*to hou heneka*).

studied in ontology like being and unity. Since the formal and the material causes are implied to be non-separate causes in *KH* 237, it seems that we should seek such non-separate extracategorical things in the remotest formal and material causes of the things in the categories. If we understand material causes in the strict sense, it seems that only the things in the category of substance have matters, and the ultimate material cause should be the prime matter. Since al-Fārābī seems to think that all the things in the category of substance are corporeal,²⁷⁵ and since al-Fārābī associates the genus with the matter and the differentia with the form,²⁷⁶ perhaps the category of substance itself contains the information about the remotest material cause, i.e., the prime matter, in the sense that if something is a substance, it is corporeal and it consists of corporeal components, and these components can be analyzed into the simplest determinate corporeal things, i.e., the elements, and the elements can be analyzed as consisting of their forms and the prime matter. Alternatively, perhaps all the categories, including the category of substance, are the remotest formal causes of the things in the categories. Finally, although the general attributes studied by ontology, like being and unity, are not causes, strictly speaking, they might be considered to be the ultimate formal causes, in the loose sense of a cause, because ultimately the general attributes like being and unity are predicated of everything, and their *per se* attributes and kinds are predicated of everything disjunctively (e.g., anything that is something is so either potentially or actually).²⁷⁷

²⁷⁵ Al-Fārābī seems to hold in *KH* (e.g., *KH* 4-5, 22-6) that all the things that fall under the categories are either sensible particulars (*mushār ilayhi*) or their universals, i.e., their thoughts (*ma'qūlāt*). Presumably, the perceptible things are bodies or attributes of bodies *qua* bodies, and their universals then would be the universals of corporeal things. Also, it seems to be suggested in *KH* 16 that natural science studies *all* substances. In other places (e.g., in Section 4, T10 in the *Introductory Treatise*; as mentioned in Section 5, *Attainment* E14=A12), al-Fārābī states that natural science studies bodies and their attributes *qua* bodies.

²⁷⁶ The close association of the genus with the matter or the subject and the differentia with the form is implied in *KH* 34 and maybe also at *KH* 88 116.8-21. There is a long Greek tradition behind this, but its discussion falls out of the scope of this dissertation. For some of the passages in Aristotle that served as a starting-point for this tradition of associating the genus with the matter or the subject and the differentia with the form, see Footnotes n.384 and n.392 in Chapter 2 Section 4. For an important late antique Greek representative of this tradition, see Porphyry's *Isagoge* 11.12-7. I also consulted Jonathan Barnes' translation of and the commentary on the *Isagoge* in Jonathan Barnes, *Porphyry: Introduction: Translated, with a Commentary* (Oxford: Clarendon Press, 2003).

²⁷⁷ As I mentioned in Footnote n.261 above, the ms. has الأنواع المقولات at line 13 at the end of (2) in T16, but this does not make good sense. Mahdi proposes to emend it into المقولات التي هي المقولات and I propose to emend it into أنواع المقولات. I assume that this means the 'kinds' of predicates or predications, similar in sense to *schēma tēs katēgorias*, i.e., the categories themselves (if it is more likely to skip an expression than adding a definite article as a copying mistake, المقولات التي هي المقولات can also work for me). By contrast, according to Mahdi's emendation, this phrase refers to the species under the categories. So, the relevant part of (2) in T16 reads ما هو غير مفارق للشيء الذي يلمس إعطاء الأنواع المقولات where I put both alternative construals of the last phrase at the end underlined. In this clause, we either have a ما - من construction or the من phrase at the end modifies الشيء. If it is a ما - من construction, the extracategorical thing which is not separate from the thing in the categories is a category itself

So, according to the description of the subject-matter of metaphysics in *KH* 16-7, metaphysics has the theology part (which studies the separate extracategorical things); it also has either restricted ontology (if the non-separate extracategorical things are only the categories themselves, and the categories themselves are just kinds (of a sense) of being), or it also has full ontology (if the non-separate extracategorical things include all the general attributes studied by ontology as described, e.g., in T1 and T5 in *On the Aims*). If the description of the subject-matter of metaphysics in *KH* 16-7 implies restricted ontology and not full ontology, we have a tension: *KH*, and especially the first part, is modeled on *Met. Δ*, and just like *Met. Δ* it discusses the categories themselves but also some other ontological ideas beyond the categories. It is true that a major topic of the first part of *KH* is the categories themselves, in particular if we also consider the topics that were likely covered before the beginning of part I as it came down to us.²⁷⁸ But there are also some other metaphysical terms discussed in the first part of *KH*: *KH* 56-61 is on “accident (‘*araḍ*)” and “*per accidens* (*bi-l-‘araḍ*)” (~*Met. Δ*.30); *KH* 74-9 is on “essence / entity (*dhāt*)” and “*per se* (*bi-dhātihi*)” (~*Met. Δ*.18); *KH* 80-103 is on “being (*mawjūd*)” but it also considers discussions of “actual (*bi-l-fiʿl*)” / “potential (*bi-l-quwwa*),” “true (*ṣādiq*)” / “false

if we read أنواع المقولات as I proposed, or it is a species under a category if we read الأنواع التي في المقولات as Mahdi proposes. Now the latter clearly does not work because it is very difficult to make sense of the claim that a species under a category, e.g., human is outside the categories. On the other hand, as I argued above, perhaps in a sense the categories themselves can be considered as the boundary cases of the things outside the categories. If the من phrase at the end modifies الشيء, the relevant part of the clause (2) would mean that we talk about something which is not separate from the thing whose quiddity natural science seeks to present and this thing whose quiddity natural science seeks to present is among the species under the categories, according to Mahdi’s construal of the last phrase, or this thing whose quiddity natural science seeks to present is from, i.e., under the categories, according to my construal. According to the من – ما reading, clause (2) must only be talking about the categories themselves as the extracategorical things which are not separate, and not all the general attributes studied by ontology. According to the other reading where we take the من phrase at the end to modify الشيء, these extracategorical non-separate things could be the categories specifically, or they can be all the general attributes studied by ontology.

²⁷⁸ In *KH* 1, without a proper introduction of any sort, al-Fārābī starts abruptly to discuss the senses of the particles *inna* (a particle which usually introduces a declarative sentence) and *anna* (a particle which usually corresponds to the cases of “that” as a subordinating conjunction with an assertive force, e.g., “he thinks *that* Aristotle is the first teacher”), and in *KH* 2, he discusses the particle *matā* (when). In *KH* 3, apparently making a claim about the particles he reviewed right above, al-Fārābī says, following Aristotle’s practice, that “many things which are investigated [*maṭlūba*] with these particles and what should be given as an answer to them are called by the philosophers using the name of these particles or a name derived from them.” For example, what is provided as a response to the question of “how (*kayfa* = *poion*)” is called “how” or “how-ness = quality (*kayfiyya* = *poiotes*).” Apart from “how”, al-Fārābī also mentions “when (*matā*),” “where (*ayna*),” “how much (*kam*),” “which / of what sort (*ayy*)” and “what (*mā*)” as particles following this rule, but he says that what is provided as a response to a question of “*hal* [interrogative particle introducing a direct or indirect yes / no question = *ara* and *ei* in Greek]” is not named after this particle but rather it is called “*inna al-shayʿ*’ [= *hoti* for something].” So, in addition to *inna* discussed in *KH* 1, and *matā* discussed in *KH* 2, it appears that al-Fārābī takes himself to have discussed these other particles before too. Of these particles, “what” is used in inquiries about substances, “how” about qualities, “how much” about quantities, “when” about something in the category of ‘when (*pote*)’ and “where” about something in the category of ‘where (*pou*)’.

(*kādhīb*)” (and again it has a shorter discussion of “*per se*” / “*per accidens*”) (~*Met.* Δ.7, 12, 29); *KH* 104-5 is on “thing (*shay*)” (there is no entry in *Met.* Δ that directly corresponds to this); *KH* 106 is on “that for the sake of which (*alladhī min ajlihi*)” (~final cause in *Met.* Δ.2); *KH* 107 on “from (‘*an*)” (~ *Met.* Δ.24).

So, if the *KH* 16-7 description of metaphysics limits it to theology and restricted ontology, it would appear that even the first part of *KH* modeled on *Met.* Δ, let alone the second and the third parts of *KH*, goes beyond the subject-matter of metaphysics. Yet, *KH*, especially the first part, does not seem to fall under any of the other theoretical disciplines whose subject-matters are described in *KH* 11-6. Then under what philosophical or scientific discipline does *KH*, especially its first part, fall? Likewise, *KW* discusses unity and its opposite, multiplicity. So, *KW* is clearly a work of ontology complementing *KH* according to the description of ontology in *On the Aims*.²⁷⁹ But if according to the *KH* 16-7 description of the subject-matter of metaphysics, metaphysics discusses the theological things and only the categories themselves, not all the general attributes discussed in ontology, under what philosophical or scientific discipline does *KW* fall? This problem is not restricted to the description of the subject-matter of metaphysics in *KH* 16-7. As we saw in Sections 4 and 5, in several works, following a late antique Greek tradition, al-Fārābī presents the subject-matter of metaphysics as if it only consists of the theology part, excluding ontology entirely. If we follow those descriptions strictly, *KH* and *KW* would not be works of metaphysics either, and it would not be clear under which philosophical or scientific discipline they fall. However, even in these accounts, we should not assume that al-Fārābī’s considered view is to reduce metaphysics to theology, leaving ontology out of metaphysics. Rather, as I briefly explained above, insofar as metaphysics is the study of the highest causes of all beings, its aim is achieved in the theology part and the ontology part supports the theology part. In particular, if, as argued above, the theological things are outside the categories, their attributes

²⁷⁹ That the one and the related terms are studied in metaphysics is confirmed in al-Fārābī’s *Book of Dialectics* too. As discussed in detail in Chapter 2 Section 5, al-Fārābī spells out his account of the senses of the one and the same from *Top.* I.7 in his *Book of Dialectics* v.3 p.89-90, and *Top.* I.7 serves as al-Fārābī’s direct source for developing his sense of the one in number as we find in *KW*. In this passage in his *Book of Dialectics*, after spelling out the senses of the one and the same building on *Top.* I.7, al-Fārābī also spells out the senses of the other (*al-ghayr*, *al-mutaghāyir*) which are the opposites of these senses of the one and the same. The discussion of the senses of the opposite of the one and the same is not in *Top.* I.7. At the end of his review of the senses of the other and those of the one and the same corresponding to them, al-Fārābī says “an account of this length on the one and the same and on the other is sufficient for the art of dialectics. An account which exhaustively treats them [sc. the one and the same, and the other] without leaving out anything belongs to metaphysics [*ma ba‘da al-ṭabī‘a*]” (وهذا المقدار من القول في الواحد (*ma ba‘da al-ṭabī‘a*) (v.3 p.90 lines 21-2). وأما توفية القول فيهما على التمام فهي فيما بعد الطبيعة بعينه وفي الغير كافٍ في صناعة الجدل. (v.3 p.90 lines 21-2).

are unlikely to be under any of the categories, strictly speaking, because as explained above, the things outside the categories are not predicated of anything and are not subjects for other things in the sense that they do not have accidental attributes and they are not matters for anything. It seems unlikely that some attributes under the categories would be *per se* attributes for these extracategorical things. It seems, then, that the attributes of the theological things will be from the general attributes studied in ontology whose scope is not restricted to the entities or features under the categories.

Indeed, recall that in the *Enumeration* account of the theology part of metaphysics we are told that in this part of metaphysics we first demonstrate that there are finitely many things outside of the purview of natural science. Then we demonstrate that they are ordered in respect of their perfection. As I sketched out in Section 5, the separate intellects are causes of being for the heavens and the Active Intellect is the cause of turning potential intelligibles and potential intellects into actual intelligibles and actual intellects. In other words, to show that these theological things exist with these attributes, we need to have a clear and general understanding of in what sense they are causes, what sense of being is relevant for the separate intellects to be causes of being for the heavens, and what are the senses or the levels of actuality and potentiality that are relevant for our understanding of the Active Intellect's causality. Moreover, we must show that there is a certain causal order among them according to their degree of perfection. So, they have priority and posteriority with respect to each other, and they are more perfect or more deficient with respect to each other. Recall that according to T1 and T5 of *On the Aims*, the *per se* attributes of being include priority / posteriority, potentiality / actuality, perfection (*tamām*) / deficiency, and cause and effect. So, these scientific inquiries about the theological things require us to have previously distinguished and spelled out the meanings of these ideas so that in these scientific inquiries in the theology part of metaphysics we can employ them correctly. But these ideas are distinguished and explained in the ontology part of metaphysics.

The relevant senses of cause / effect, actual / potential etc. can be simply assumed in the investigations in the particular sciences, and the investigation of these ontological ideas can be deferred to some other discipline. For example, when we investigate what actualizes the potentiality for sight in biology and psychology and how this happens, we can simply assume how the different senses or levels of the potentiality and the actuality for some act should be

understood; then, identifying the proper subject, we can investigate what is the cause of an embryo's developing its potentiality for the power of seeing into the actuality of having the power of seeing, and again identifying the proper subject, we can investigate what is the cause of a person with functioning eyes to come to actually see something from potentially seeing it. The proper biological and psychological contents of these inquiries do not concern explaining the different senses or levels of actuality and potentiality concerning an act; assuming what they are, we use them in our inquiry into the process by which an embryo develops the power of seeing and the causes of this process or in our inquiry into how a person with functioning eyes comes to see something from not seeing it and the causes of this process. However, unlike the scientific inquires in the particular sciences, in the inquiries into the existence of the theological things and their attributes, we are not looking for entities or features under the categories that we come to know by perception (except in the boundary cases where we cite entities and features under the categories as the ultimate effects of these theological things); rather, what the ontological ideas mean are integral to the inquiries about the existence of the theological things with their attributes. Of course, after distinguishing and explaining the different ways in which things are said to be something in potentiality or in actuality, we can justify why our assumptions about the ways in which something has a biological or psychological act in potentiality or in actuality are correct, but this is no longer a biological or psychological justification, properly speaking. In short, the results of ontological inquiries are assumed in the particular sciences and hence ontology is clearly of epistemic value to the particular sciences when it comes to justifying those assumptions (and correcting wrong assumptions about the ontological ideas employed in these particular sciences), but unlike the inquires in the particular sciences, the ontological inquiries are *integral* to the theological inquiries, and in a sense there is not much content to the theological inquiries *independent* from the ontological inquiries.

Let me describe a bit further how ontological ideas are employed in theological inquiries according to al-Fārābī. As mentioned above, according to the description of the subject-matter of the theology part of metaphysics in the *Enumeration*, we also demonstrate that there are finitely many such theological things. In order to explain fully that there are finitely many of them, and, e.g., not just a single theological thing that directly causes the beings of the heavens and turns potential intelligibles and intellects into the actual ones, we should explain in what sense each of these several theological things is one and in what sense each is different from the others. So, we

would need to distinguish the different senses of the one and assuming that the senses of the same are the *per se* attributes of the one and the senses of the different are opposites of the senses of the same (or something along these lines), we would need to have clarified at least some of the *per se* attributes of the one and their opposites for this inquiry too.

As described in the *Enumeration* account of theology, after we show that the most perfect one of these theological things, i.e., God exists, we proceed to demonstrate God's attributes. As I mentioned in Section 5, we find a version of such a 'way-down' of theology in *MF* and *SM*. As mentioned in the *Enumeration* account, we show that God is (*mawjūd*), he is one (*wāḥid*), and he is real / true (*ḥaqq*). We also show that God's being (*wujūd*), unity (*wahda*), and reality / truth (*ḥaqīqa*) are not from anything else, but all the other things take their being, unity, and reality / truth from God. For this purpose, we should first distinguish the senses of being (done in *KH*) and unity (done in *KW*), and then investigate which of these senses of being and unity apply to God (undertaken in *MF* Ch.1, 2-5). As we see in *MF* 9, it turns out that God's *ḥaqīqa* has two senses and they can be understood in terms of the two senses of being (as true and as having an extramental quiddity). For the other attributes of God that *MF* tries to establish, similar things can be said: these attributes are either ontological ideas (e.g., God is perfect, without a partner (i.e., not one in species with something else), without a contrary), or these attributes are grasped by analogical extension of some features falling under the categories (e.g., justice, knowledge), but even in this latter cases, the ontological idea of perfection determines the direction of such an analogical extension (e.g., God is *perfectly* just, unlike the just things around us; he is *perfectly* knowing, unlike the things with knowledge around us).²⁸⁰

So even if the description of the subject-matter of metaphysics in *KH* 16-7 includes the theological things and only the categories themselves, without other things discussed in ontology, we should not take this to be al-Fārābī's final and absolute statement on the subject-matter of metaphysics. Besides, I pointed out all the issues in the interpretation of the details of this

²⁸⁰ For al-Fārābī's use of some ontological ideas in *KW* in the theological inquiries in *MF* and *SM*, especially the idea of unity by virtue of circumscription by a quiddity (along with the corresponding sense of being), see Janos, *On the One and Oneness*, 116-121. For a summary of al-Fārābī's account of how beings are causally ordered in *KH* which is applied in *MF*, see Menn, *Al-Fārābī's Kitāb al-Hurūf*, 93-6. For the application of the senses of unity and being by virtue of circumscription by a quiddity in *MF*, see Menn, *Fārābī in the Reception of Avicenna*, 89. More generally, for a helpful explanation of major aspects of al-Fārābī's arguments for God's attributes in *MF* and the use of the ontological concepts from *KH* and *KW* for these purposes, see Menn, *Al-Farabi's Metaphysics* Section 4.

account above; that should also count towards not taking this account to be al-Fārābī's absolute and final say on the subject-matter of metaphysics. In any case, in this chapter, I presented a review of al-Fārābī's accounts of the subject-matter of metaphysics in practically all his works and this review showed that the intersection of the subject-matter of metaphysics in all these accounts is the study of the theological or divine things, and I tried to explain above that there is a good theoretical reason for prioritizing the theology part of metaphysics in describing its subject-matter, but that this should not be taken as an indication that al-Fārābī reduces metaphysics to its theology part without any qualification, leaving ontology out of metaphysics.

Before I conclude this section, I want to comment briefly on in what sense *KH*, and especially the first part, is a work of ontology and *KW* complements it as a work of ontology. As mentioned above, especially the first part of *KH* is modeled on *Met. Δ*. As Menn points out, Aristotle in *Met. Δ* and al-Fārābī in *KH* distinguish the senses of some philosophical terms to facilitate their correct use by avoiding the fallacies involving them, but if this is all Aristotle does in *Met. Δ* or al-Fārābī does in *KH*, what they do would be “elementary and propaedeutic task of philosophical education” not connected to metaphysics specifically rather than any other philosophical or scientific discipline.²⁸¹ According to al-Fārābī, the ideas covered in *Met. Δ* are the ones studied in the ontology part of metaphysics, i.e., being, unity (presumably also their opposites, non-being, multiplicity), their kinds and *per se* attributes,²⁸² and *Met. Δ*, at least for the most part, lends

²⁸¹ Menn, *Al-Fārābī's Kitāb al-Hurūf*, 67.

²⁸² In the account of the subject-matter of *Met. Δ* in *On the Aims*, al-Fārābī says that *Met. Δ* “consists of the exposition [*tafṣīl*] of what is denoted by each one of the expressions which denote the subjects [*mawḍū'āt*] of this science, the kinds [*anwā'*] of its subjects, and their *per se* attributes [*lawāḥiq*], whether [these expressions denote] univocally [*bi-l-tawāṭu'*], or by focal equivocation [*bi-l-tashkīk*, e.g., “healthy” said of food and “healthy” said of someone's complexion in relation to health], or by simple equivocation [*bi-l-ishtirāk al-ḥaqīqī*, e.g., “bank” said of the edge of a river and “bank” said of a financial institution]” (37.6-8). Recall that according to *On the Aims*, metaphysics studies the general attributes, being and unity (and their opposites, non-being and multiplicity), and their kinds, and their *per se* attributes; according to *On the Aims*, metaphysics also studies the theological things (God and other “separate” things) but al-Fārābī does not say anything in *On the Aims* that suggests that metaphysics also studies the kinds of God and the other theological things; he does not say that metaphysics studies the *per se* attributes of these theological things either but some of the things al-Fārābī says in his account of the subject-matter of *Met. Δ* at 38.2-4 could perhaps be interpreted in that way. In any case, there is no discussion of the theological things (i.e., the unmoved movers of the heavens for Aristotle) in *Met. Δ*. So, it stands to reason that the “subjects [*mawḍū'āt*]” in this passage refers to the general attributes studied in ontology (being and unity, and along with them also their opposites). This phrasing would also agree with the phrasing of what metaphysics studies in al-Fārābī's *Book of Demonstration*: as summarized at the beginning of Section 3, al-Fārābī says that the subjects (*mawḍū'āt*) of the universal disciplines including metaphysics are “universal entities [*umūr kullīyya*] like being simpliciter [*al-mawjūd 'alā al-iṭlaq*], the one and the many” while the end (*ghāya*) of metaphysics is “the comprehension [*wuḡū' 'alā*] of the ultimate causes [*quṣwā asbāb*] of all beings,” i.e., God and the other theological things (or primarily these) (v.4 p.62). I also pointed out there in Footnote n.151 that there seems to be a background to this characterization of metaphysics in terms of its subject and its end in the late antique Alexandrian *Isagoge*

itself to such an interpretation.²⁸³ Similarly, being modeled on *Met. Δ*, *KH* (and along with it, *KW*) distinguishes the senses of these ontological terms to facilitate their correct use. Recall that two major ontological ideas according to *Met. Γ.1-2* and al-Fārābī's *On the Aims* are being and unity. Although being is discussed extensively in the first part of *KH* (*KH* 80-103), unity is not discussed in *KH* at all. Yet, unity, and its opposite multiplicity, are extensively discussed in *KW*. Al-Fārābī starts his discussion of unity and multiplicity in *KW* clearly from the *Met. Δ.6* discussion of unity just as he starts his discussion of being in *KH* clearly from the *Met. Δ.7* discussion of being. Just like what *KH* does with the ontological ideas it discusses, *KW* also distinguishes the senses of unity and multiplicity to avoid fallacies in their applications. Besides, as I discuss in Chapter 3 Section 3 and as already observed by Menn and Janos, *KH* and *KW* are closely connected to each other by the discussion of the sense of being by virtue of circumscription by an extramental quiddity in *KH* and the discussion of the sense of unity by virtue of circumscription by a quiddity in *KW*.²⁸⁴

It is worth noting that *KH* and *KW* do not present any extensive discussion of God or the other theological things. In fact, as I pointed out above, *KH* and *KW* seem to explicitly avoid making any robust claims about the theological things unless it is absolutely demanded by the context. This supports the view that if *KH* and *KW* are works in metaphysics, they are not works in theology, so they must be works in ontology.

Even though the discussion of ontological ideas in *KH* and *KW* clearly starts from the ones discussed in *Met. Δ*, these works are not a paraphrase or commentary on *Met. Δ*. They select only some of the ideas discussed in *Met. Δ*, they add some others, and elaborate on some ideas in a way that significantly transforms their understanding in Aristotle. One major example of this is the senses of being and unity by virtue of a circumscription by a quiddity, and I will discuss this in Chapter 3, but there are also some other differences between Aristotle's accounts in *Met. Δ* and al-Fārābī's corresponding accounts in *KH* and *KW* that perhaps do not have a big philosophical

commentaries. So, it would not be surprising if al-Fārābī uses this idea in *On the Aims* too, with the “subjects [*mawḍūʿāt*]” of metaphysics specifically referring to the universal attributes.

²⁸³ See Appendix: Ontology in *Met. Γ.1-2* and *Met. Δ*.

²⁸⁴ For the close association between *KW* and *KH*, including this connection through the related senses of being and unity by virtue of circumscription by a quiddity, see Janos, *On the One and Oneness*, especially 104-5 and 116-7; Menn, *Al-Fārābī's Kitāb al-Ḥurūf*, 91, n.39; Menn, *Fārābī in the Reception of Avicenna*, 88-90; Menn, *Al-Fārābī's Metaphysics* Section 3.6.

impact by themselves but still show the influence of the description of the subject-matter of the ontology part in *On the Aims*. Recall that in the *On the Aims* account, being and unity are the most general attributes, and they appear to be presented on an equal footing. The discussion of the senses of unity in *KW* is much more extensive than the discussion of the senses of unity in *Met.* Δ.6; it is also longer than the discussion of the senses of being in *KH* too. This might reflect al-Fārābī's contention that unity and being are on a par with each other as the main subjects of ontology and deserve equal treatment. Also recall that according to the *On the Aims* account, ontology also studies the opposites of being and unity, i.e., non-being (‘*adam*’) and multiplicity (*kathra*). The opposites of the senses of being are not discussed in *Met.* Δ.7 except for a passing remark that the opposite of the sense of being *qua* true is false (1017a31-2, 34-5); by contrast, al-Fārābī presents a detailed discussion of the senses of non-being (*ghayr mawjūd*) which are the opposites of the senses (and the kinds or *per se* attributes) of being in *KH* 94-98, 100-1. Also, multiplicity is mentioned only in a sentence at the end of *Met.* Δ.6 (1017a3-6), but in *KW* the discussion of the senses of multiplicity (and how they relate to the senses of unity) are as extensive as the discussion of the senses of unity.²⁸⁵

So, *KH* (especially the first part) and *KW* are modeled on *Met.* Δ, but they also differ from it in some important ways. And there is more to how al-Fārābī refashions *Met.* Δ in *KH* (and the same should also apply to *KW*). The “*hurūf*” in the title of *KH* (sc. *Kitāb al-Ḥurūf*) can mean letters or particles (sg. *ḥarf*). So, the Book of *Ḥurūf* can mean the Book of Letters or the Book of Particles. In the *Fihrist*, Aristotle’s *Metaphysics* is called the *Book of Letters* and it is implied that it is called in that way because it is ordered according to the letters in the Greek alphabet; also, Ibn al-Nadīm refers to an individual book of the *Metaphysics* as a *ḥarf* (letter), or he uses the Arabicized name of the letter after which the book is named (e.g., he refers to what we have as the second book of the *Metaphysics* simply as “*al-alif al-ṣuḡhrā*” ~ lesser alpha, and to the twelfth book of the *Metaphysics* as “*maqālat al-lām*” ~ lambda).²⁸⁶ Similarly, in the long title of

²⁸⁵ Although I think that al-Fārābī’s commitment to the program for ontology outlined in *On the Aims* has an influence in the fact that he provides an extensive discussion of the senses of multiplicity in *KW*, I also think that the *main* reason for al-Fārābī to carefully spell out the senses of multiplicity and especially to discuss the logical relations between various senses of unity and various senses of multiplicity was to respond to what he perceived as a fallacy of equivocation in al-Kīndī’s argument for the existence of God in the third and the fourth *fanns* of the extant first *juz*’ of his *On First Philosophy*. I intend to discuss this topic in some other work.

²⁸⁶ Flügel 251 = Sayyid v.2 171.

On the Aims,²⁸⁷ al-Fārābī refers to the *Metaphysics* as Aristotle’s “work named after letters [*al-kitāb al-mawsūm bi-l-ḥurūf*]” (34.4), and in this treatise, al-Fārābī also uses the Arabicized letter name of the twelfth book of the *Metaphysics* (“[*al-maqāla*] *allatī ‘alayhā ‘alāmat al-lām*” “*maqālat al-lām*” (34.13, 15)).

On the other hand, *KH*, especially the first and the third parts show a special interest in some particles; most of the topics discussed in these two parts can be organized as discussions of some particles. Indeed, as Menn points out, al-Fārābī tends to understand the ontological terms discussed in *KH* to be particles or terms derived from particles or strongly associated in meaning with some particles, and many terms discussed in *Met.* Δ lend themselves to such an interpretation.²⁸⁸ As Menn points out, in *KH* al-Fārābī shows a particular interest in the fallacies due to the form of the expression (*schēma tēs lexeōs*): for example, “*mawjūd*” (meaning being as *ens*) has the form of a derived noun (*mushtaqq*), and derived nouns usually indicate that an accident denoted by its *mithāl awwal* (the word in the paradigm form from which it is derived) is present in it. For example, “*bayād*” (“whiteness”) is the *mithāl awwal* and “*abyaḍ*” (“white” as in “a white thing” or “this cup is white”) is *mushtaqq* from it; something is called *abyaḍ* because *bayād* is present in it. Accordingly, based on its form, “*mawjūd*” makes us think that it refers to something which is so called because an accident, *wujūd* (being as *esse*), is present in it, but according to al-Fārābī, this is a fallacy due to the form of the expression because the *wujūd* of something that is called *mawjūd* (in the sense of having an extramental quiddity) is nothing but the quiddity of this thing or parts of its quiddity.²⁸⁹ In other words, the form of the Arabic term, “*mawjūd*” is misleading and in an ideal philosophical language where the forms of the words systematically represent their meanings, “*mawjūd*” and “*abyaḍ*” would not have the same form.

To put it briefly, primarily following *DI* and the late antique commentaries on it, al-Fārābī distinguishes three types of simple expressions (*alfāz mufrada*): noun (*ism*), verb (*kalima*), and particle (*ḥarf* or *adā*): nouns signify on their own without co-signifying time; verbs signify on their own while co-signifying time; particles do not signify on their own but they signify only when they are connected to a noun or a verb or a compound expression (*lafz murakkab*). The *muthul uwal* (pl. of *mithāl awwal* = words in the paradigm form) are normally nouns which are

²⁸⁷ See Footnote n.26 close to the beginning of this chapter above.

²⁸⁸ Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 64-71, especially 69-70.

²⁸⁹ For an extensive discussion, see Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 71-84.

not derived from other words; some of them have other words derived (*mushtaqq*) from them while others do not. The *muthul uwal* which do not normally²⁹⁰ have other words derived from them, like “*insān*,” usually refer to things in the category of substance (as well as the extracategorical ‘substances’, i.e., God and the other theological things). The *muthul uwal* which normally have words derived from them usually denote attributes under the accidental categories. There are nouns and verbs derived from these *muthul uwal* nouns: usually, a noun derived from a *mithāl awwal* (like “*abyaḍ*” derived from “*bayāḍ*”) denotes the presence of the attribute denoted by its *mithāl awwal* in a subject without the co-signification of time, while a verb derived from a *mithāl awwal*, like “*yamshī*” (“[he] is walking”) from “*mashy*” (“walking”), denotes the presence of the attribute (walking) denoted by its *mithāl awwal* in a subject with the co-signification of time.²⁹¹

Given al-Fārābī’s tendency to interpret the ontological terms discussed in *Met. Δ* as particles, given his interest in the fallacies of the form of the expression that occur due to the form of some of these ontological terms that do not follow the general rules for what words of a particular form should mean, and given that nouns and verbs usually denote things in the categories (including the names for the extracategorical ‘substances’, i.e., the theological things) or a thing in an accidental category present in a subject (with or without the co-signification of time), it seems reasonable, as Menn suggests, that in an ideal philosophical language al-Fārābī would consider the ontological ideas to be signified not by nouns or verbs but by particles and they would be similar to what we would call logical constants.²⁹²

So, *KH* and *KW* together form a single project reflecting al-Fārābī’s mature views in ontology. Menn reports that taking into consideration of the fact that *KH* reached us in an apparently

²⁹⁰ Except for the somewhat contrived abstract nouns derived from them, e.g., *insāniyya*, meaning humanness.

²⁹¹ See *KH* 19-36. For brief accounts of noun, verb, and particle, see *al-Fuṣūl al-Khamsa* (Five Sections) in *Al-Manṭiq ‘inda al-Fārābī* v.1, p. 67-71, and *Expressions Used in Logic*, 1-2.

²⁹² Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 64-71, especially 67-8. As Menn points out, “[m]any of the particles discussed in [*KH*] have both a logical sense, signifying a [second thought, *ma ‘qūl thānin*], and a ‘real’ scientific sense; the scientific sense will be specifically metaphysical... and the main interest of [*KH*] will be in the metaphysical sense, describing the logical sense chiefly to ward off confluences between it and the metaphysical sense... There are of course some particles which have only logical senses, such as ‘and,’ and [*KH*] (unlike [*Expressions Used in Logic*]) generally does not bother to mention these expressions at all” (*Al-Fārābī’s Kitāb al-Ḥurūf*, 71, n.17). For example, as briefly mentioned above, the sense of *mawjūd* as true signifies a second thought (it correctly holds of a mental representation just in case there is a real extramental entity or state of affairs that this mental representation describes), while the sense of *mawjūd* in the sense of having an extramental quiddity is used in scientific inquiries, properly speaking, and it just signifies the real extramental quiddity of the thing which is said to be *mawjūd*. So, the metaphysical sense of *mawjūd* is this second sense.

incomplete and disordered condition, Mahdi suggests that *KW* might have been originally part of *KH* but later separated and transmitted as an independent treatise.²⁹³ If *KW* was originally part of *KH*, it would have most probably been part of the first part of *KH* along with the entry on being (*mawjūd*). However, the length of *KW* is incomparable to any of the entries in the first part of *KH*. Moreover, the third, the fourth, and the fifth parts of *KW* are in a sense a review of the first two parts of *KW*, but the entries in the first part of *KH* does not seem to have a similar form of presentation with the bulk of the content being initially presented and then again reviewed only with small additions to the content. So, on account of these two differences, I tend to favor the alternative hypothesis put forth by Menn that al-Fārābī started to work on this ontological project but his discussion on unity and multiplicity got too long and he decided to separate it and complete it as a self-standing treatise.²⁹⁴

After all, as I indicated in Footnote n.24 close to the beginning of this chapter above, if the framing account in *Aḥkām al-Nujūm* is correct, it was al-Fārābī's habit to collect notes on a topic and then compile them into a treatise or a book, and as we see in this framing account, sometimes other people compiled these notes into a treatise while al-Fārābī was still alive. It seems quite likely that al-Fārābī kept a metaphysics file, so to speak; the core of the notes in this file pertaining to ontology derived from *Met. Δ*, as according to al-Fārābī's understanding stated in *On the Aims, Met. Δ* is about the general attributes (being and unity, perhaps also their opposites, non-being and multiplicity), their kinds, and their *per se* attributes studied in the ontology part of metaphysics.²⁹⁵ Then al-Fārābī added notes developing other relevant ideas in the *Met.* according to his understanding of metaphysics as a science. Then, he also added notes about scientific methodology pertaining in particular to metaphysics drawing on *APo* II. As a

²⁹³ Menn, *Al-Fārābī's Kitāb al-Ḥurūf*, 91, n.39; Menn, *Fārābī in the Reception of Avicenna*, 90. Also compare Sarah Stroumsa, "Al-Fārābī and Maimonides on Medicine as A Science," *Arabic Sciences and Philosophy* 3 (1993): 235–49, 239–40: "From Ibn Abī Uṣaybi'a's discussion of the writings of al-Fārābī it appears that parts of al-Fārābī's writings were sometimes detached from their original context. These would then circulate as separate treatises, often untitled, or with a title such as 'A treatise of his on... (*maqāl* [*kalām* or *maqāla*?] *lahu fī...*).' This practice was applied to subjects that were considered particularly useful or that were particularly popular..." That said, as I remind below in the body of the text, it seems that al-Fārābī was wont to collect notes and paragraphs on a topic then compile them into treatises or books. If so, it is possible that al-Fārābī himself or another person compiled his notes into treatises of various length (another person could do this while al-Fārābī was alive, as the framing account in *Aḥkām al-Nujūm* suggests, or maybe after al-Fārābī passed away). So, these apparently short treatises that Stroumsa refers to can be explained in this way rather than assuming that they were detached from a once longer work written by al-Fārābī.

²⁹⁴ Menn, *Al-Fārābī's Kitāb al-Ḥurūf*, 91, n.39; Menn, *Fārābī in the Reception of Avicenna*, 90.

²⁹⁵ See Footnote n.282 above.

preface to these, he also added reflections on the history of arts and sciences and the development of scientific vocabulary and its transfer from one language to another and the potential errors that arise due to the misleading forms or associations of the scientific terminology developed with the expansion of the arts and sciences or such potential errors that arise due to the translation of the scientific terminology into another language. This latter group of reflections formed the basis of the second part of *KH*. His notes developed from *Met. Δ* (except for those on unity and multiplicity) were compiled into the first part of *KH*. His notes on the particles used in asking questions and answering them in scientific inquiries (and in inquiries in the other syllogistic arts, i.e., dialectics, sophistics, rhetoric, and poetics) especially insofar as they pertain to metaphysics formed the basis of the third part of *KH*.²⁹⁶ So from the ontology notes in this metaphysics file and the associated notes, al-Fārābī compiled *KH* except for the notes on unity and multiplicity presumably because, as mentioned above, the notes on unity and multiplicity got too long, and this led al-Fārābī to decide to compile them in a separate treatise which we have as *KW*. The notes in theology in this metaphysics file made their way mainly into *SM* and *MF*.

Conclusion

In this chapter, I discussed al-Fārābī's accounts of the subject-matter of metaphysics. In Section 1, we saw that the ontology and the theology parts of metaphysics are described in *On the Aims*. Also, there is a condensed claim in *On the Aims* which can be an allusion to what I called the groundwork part of metaphysics. As discussed in Section 2, in the *Enumeration*, al-Fārābī clearly distinguishes three parts of metaphysics: ontology, theology, and the groundwork part. According to the *Enumeration* account, in the groundwork part, we dialectically expound and defend the correct principles of the particular sciences by exposing the flaws in the views presented by the earlier philosophers about them. It seems that the groundwork part is peripheral compared to the ontology and the theology parts and can easily be detached from them. Al-Fārābī makes clear in the *Book of Demonstration*, discussed in Section 3, that the subject (*mawḍūʿ*) of metaphysics is the general attributes like being and unity (studied in the ontology part) and the end (*ghāya*) of

²⁹⁶ As also cited in Footnote n.243, I follow here Menn's proposal to understand how the three parts of *KH* fit together and form one work: see Menn, *Al-Fārābī's Kitāb al-Ḥurūf*, 63-71.

metaphysics is the understanding of the ultimate causes of all beings (achieved in the theology part). As I further elaborate in Section 6, we need to explain the ontological ideas first and then use them in showing the existence of the highest immaterial causes, in showing the causal order among them, and in spelling out their other attributes. So, it seems that a science whose purpose is to understand the highest causes of all beings also needs ontology, but it can do without dialectically defending the correct understanding of the principles of the particular sciences, i.e., without the groundwork part. In agreement with this, the groundwork part is presented as a part of metaphysics in none of the accounts of metaphysics by al-Fārābī reviewed in the rest of this chapter. I also explained in Section 3 how the demonstrative relations between the superior and the subordinate sciences are presented in the *Book of Demonstration* and in particular between metaphysics as a superior science and the particular sciences subordinate to it. In Section 4, I reviewed al-Fārābī's accounts of the subject-matter of metaphysics which closely follow a late antique Greek tradition. In these accounts, al-Fārābī presents the subject-matter of the theology part as the subject-matter of metaphysics as a whole, apparently obliterating the ontology part completely. In section 5, I discussed the subject-matter of metaphysics in the *Attainment* with the help of the *Philosophy of Aristotle*, and I spelled out how the other theoretical sciences, especially mathematics and natural science, are demonstratively related to metaphysics, pursuing further my discussion in Section 3 about the demonstrative relations between the superior and the subordinate sciences in the *Book of Demonstration*. In the *Attainment* too, the subject-matter of the theology part seems to be presented as the subject-matter of metaphysics as a whole. In the theoretical sciences, we start from mathematics; we go from arithmetic to geometry and to the 'applied' mathematical sciences. We use some of the propositions demonstrated in the 'applied' mathematical sciences and some relevant self-evident truths as our principles of instruction in natural science, and we demonstratively move upwards demonstrating the existence of causes with their attributes from their effects then turning back and demonstrating from their causes why these effects hold. In this way, we climb up to the highest causes in natural science: the heavenly bodies and the intellect. Using some propositions about them and some relevant self-evident truths as our principles of instruction in metaphysics, we similarly move up from effects to causes in immaterial divine things (God, the causes of the heavens, and the Active Intellect) and finally we reach the highest cause of all, God. This is the 'way-up' of the theology part. Then we demonstrate God's attributes, and we descend demonstratively explaining the effects from the

causes within the immaterial divine things, and then down to the natural world. This is the ‘way-down’ of the theology part. Even though al-Fārābī does not present in detail his views in the ‘way-up’ of the theology part in any work that reached us, in Section 5, I spelled out the contours of how the ‘way-up’ of the theology part would look like for al-Fārābī, drawing on his *SM*, *MF*, and *On the Intellect*. In this section, I also briefly described how al-Fārābī presents his views in the ‘way-down’ of the theology part in *SM* and *MF*. Finally, in Section 6, I tried to clarify the difficult details in al-Fārābī’s account of the subject-matter of metaphysics in *KH*, and I explained why we should consider *KW*, and *KH* (especially its first part) to present al-Fārābī’s own views in the ontology part of metaphysics.

Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ

A comprehensive discussion of Aristotle’s account of the subject-matter of metaphysics in *Met.* Γ.1-2 and how it relates to the terms discussed in *Met.* Δ is beyond the scope of this dissertation, but to briefly explain how *Met.* Γ.1-2 functions as al-Fārābī’s main source for spelling out the subject-matter of the ontology part of metaphysics in *On the Aims*, and to illustrate that al-Fārābī’s reading of *Met.* Δ as explaining the ontological terms in *On the Aims*²⁹⁷ is an understandable reading of *Met.* Δ, at least for the most part of it, let me outline the major aspects of Aristotle’s account of the subject-matter of metaphysics in *Met.* Γ.1-2 and how *Met.* Δ relates to it. Aristotle asserts that the science under consideration, i.e., metaphysics studies “being *qua* being and its *per se* attributes [*to on hē(i) on kai ta toutō(i) huparchonta kath’ hautō*]” (1003a21-2) (it is mentioned or implied at *Met.* Γ.1 1003a26-32 and Γ.2 1003b15-9 that metaphysics also studies the ultimate causes and principles of being *qua* being but this is not our concern here). He adds at 1003a33-b19 that there is one science not only of a group of things denoted by a univocal term (i.e., falling under the same genus) but also of the things which are denoted by terms related by focal (*pros hen*) equivocity (i.e., even if these things do not fall under the same genus, there is some kind of thing among them that sits at the center, so to speak, and the others are related to it in regular ways): for example, health (*hugieia*), as the good condition of the human body, is the core thing studied by medicine, and the quality of being healthy (*hugieinon*) belonging to some foods because they contribute to health and the quality of having a healthy look belonging to

²⁹⁷ See Footnote n.282 in Section 6 above.

someone's complexion because it is a sign of the presence of health in this person are also studied by the same science). According to this passage, substance is the focal thing studied by the science under consideration, and it seems that the things which are said *pros* substance include the other categories (and the categories are the kinds²⁹⁸ of being (according to its sense as divided into the categories presented at *Met.* Δ.7 1017a22-30)), their negations and privations (see, in particular, 1003b8-10), and presumably also the *per se* attributes of being, which seem to be said *pros* beings, and through them *pros* substance.²⁹⁹ In any case, whether Aristotle considers

²⁹⁸ As we see below, Aristotle himself talks about the species or kinds (*eidē*) of being in *Met.* Γ.2 and there are three candidates for this: (1) the four senses of being distinguished in *Met.* Δ.7 (being *per accidens*, being as divided into the categories, being as true, and being as in potentiality and in actuality), or (2) more specifically, the subcases of the sense of being as divided into the categories, i.e., the categories themselves, or (3) the three types of things that are studied by each of the three theoretical sciences according to *Met.* E.1, namely the physical substances (separable but movable), mathematical things (inseparable but immovable), and the theological substances (both separable and immovable). Based on a TLG proximity search with the relevant terms, it seems that Aristotle does not use the phrases an *eidos* or the *eidē* of being (*tou ontos*, *tou einai*, or *tōn ontōn*) in the relevant sense at all except at the end of the passage *Phys.* III.1 200b32-1a9 (~ *Met.* K.9 1065b7-14) and there he uses it to mean the categories. That said, Aristotle uses the similar phrases, *genos* or *genē* of being, for all three options. For the first option, see *Met.* E.4 1028a1 where *to loipon genos tou ontos* seems to refer to the senses of being *per accidens* and being *qua* true together as opposed to the sense of being as divided into the categories. For the second option, see *DA* II.1 412a6 where substance is called *genos hen ti tōn ontōn*, and *APo* I.32 88b1-3 where it seems that quantities and qualities are called *genē tōn ontōn*. For the third option, see *Met.* E.1 1025b18-21 where natural science is said to study *genos ti tou ontos*, and also Γ.3 1005a34 again about nature.

A comprehensive review of all the relevant evidence to decide which option Aristotle likely means by the *eidē tou ontos* here is beyond the scope of this appendix but I just want to note that the piece of evidence that strongly favors the second option, i.e., the categories, is that in the very important being-unity equivalence argument in the middle of the extended passage under consideration (namely at 1003b22-34), Aristotle concludes that there are as many *eidē* of unity as there are of being (1003b33-4) and this argument does not make good sense either with the first option or with the third option; moreover, the Iota 2 version of this argument at 1054a13-19 explicitly talks about the categories. Both the Γ.2 and the Iota 2 versions of this being-unity equivalence argument are discussed extensively in Chapter 3 Section 3 below. Apart from this, I also briefly explain below that the second option, i.e., taking the *eidē* of being to refer to the categories, affords a coherent interpretation of some difficult details in the extended Γ.2 passage under consideration (1003b22-a9); although I do not address this explicitly below due to the limitations of space, despite some advantages it has, on the whole the third option does not perform as well in providing a coherent interpretation of this whole passage as the second, and the first option simply performs poorly.

Sometimes when Aristotle says that being is said in many ways (or something along these lines), he means that each of these ways is one of the four senses of being distinguished in Δ.7 (*Met.* E.2 1026a33-b2; also compare *Met.* Δ.11 1019a4-7), but more often, he means that each of these ways is one of the categories (e.g., *Met.* Z.1 1028a10-3, Z.4 1030a17-20 (τὸ τί ἐστὶ πλεοναχῶς λέγεται), N.2 1089a7-9, *Phys.* I.2 185a21-3). So, when I call the categories the kinds or species (*eidē*) of being here, I acknowledge that this is not how Aristotle usually refers to the categories outside of *Met.* Γ.2. That said, as I pointed out above, Aristotle does not seem to call the remaining two options *eidē* of being outside of *Met.* Γ.2 at all as he does not seem to use the phrases an *eidos* or the *eidē* of being (*tou ontos*, *tou einai*, or *tōn ontōn*) in the relevant sense anywhere outside of *Met.* Γ.2 except for the passage from *Phys.* III.1 (and its *Met.* Kappa version) mentioned above where *eidē tou ontos* refers to the categories.

²⁹⁹ The relevant sort of being said in many ways that I call focal equivocacy is characterized as being said by adding (*prostithenai*) or subtracting (*aphairein*) in relation to the focal thing (*pros to auto kai hen*) at *Met.* Z.4 1030a32-b3. As an example, Aristotle mentions a negation (*to mē epistēton* in relation to *epistēton*) and he gives one of the usual examples of focal equivocacy: the treatment, the patient, and the tool are called medical (*hiatrikon*) because of their relations to the art of medicine (*hiatrikē*) (along with health, medicine is mentioned as an example of focal equivocacy at the beginning of *Met.* Γ.2). Although *per se* attributes are not explicitly addressed here, they might fall

the *per se* attributes of being to be said *pros* being, and ultimately *pros* substance, or not, we will see that Aristotle explicitly mentions some *per se* attributes of being which are studied by metaphysics.

Aristotle claims that there is one body of knowledge or science (*epistēmē*) grasping a genus (*genos*) as a whole, and although this *epistēmē* is one in genus, each species (*eidos*) of this *epistēmē* grasps a species of the subject genus.³⁰⁰ Applying this claim to the body of knowledge or the science of being *qua* being under consideration, he says that there is an *epistēmē* which is one in genus studying all the species of being *qua* being as a whole and each species of being is studied by a species of this *epistēmē*. To motivate the general claim, he mentions as an example that “although the art of grammar [*hē grammatikē*] is one [*epistēmē*], it studies all the phonemes [*phōnai*],” with the implication that the species of grammar study the species of its subject genus, i.e., each species of grammar studies a phoneme (1003b19-22). Now, we would not normally think of each branch of the *grammatikē*, i.e., the art of writing and reading (including, more broadly, the study of a language and the literature of this language) as studying a single phoneme. In light of this, we should not necessarily assume that the species of the *epistēmē* which studies being *qua* being refer to the branches of the science under consideration in the way that, e.g., biology and cosmology are branches of natural science; we should leave it open that Aristotle might be simply talking about the parts of this body of knowledge that grasp each species of being.

To explain this claim, Aristotle presents a complicated account at 1003b22-4a9; let me bracket the passage at b22-a2 for now, and jump right ahead to what seems to be the conclusion of this account:

T1 *Met.* Γ.2 1004a2-9

under this description because a *per se* attribute of X would have X in its definition (e.g., even is defined as a *number* which can be divided by a single division into equal parts); so, in a way, the *per se* attribute of X would be defined by adding to X.

³⁰⁰ In this talk of the “genus” and the “species” of the subject of a science and of this science itself, I simply follow Aristotle’s language. It is worth noting that in some cases, the subject of a science is not a genus, strictly speaking, but a quasi-genus, as in metaphysics whose subject, being, is a quasi-genus because being is not said univocally. Also, as I mention below, it is not entirely clear to me what exactly is meant when Aristotle talks about an *epistēmē* which is one in *genos* and about the *eidē* of this *epistēmē*.

καὶ τοσαῦτα μέρη φιλοσοφίας ἔστιν ὅσαιπερ αἱ οὐσίαι· ὥστε ἀναγκαῖον εἶναί τινα
 πρώτην καὶ ἐχομένην αὐτῶν. ὑπάρχει γὰρ εὐθὺς γένη ἔχον τὸ ὄν [καὶ τὸ ἐν].³⁰¹ διὸ καὶ αἱ
 ἐπιστῆμαι ἀκολουθήσουσι τούτοις. ἔστι γὰρ ὁ φιλόσοφος ὥσπερ ὁ μαθηματικὸς
 λεγόμενος· καὶ γὰρ αὕτη ἔχει μέρη, καὶ πρώτη τις καὶ δευτέρα ἔστιν ἐπιστήμη καὶ ἄλλαι
 ἐφεξῆς ἐν τοῖς μαθήμασιν.

[1] And there are as many parts [*merē*] of philosophy as there are substances [*hai ousiai*];
 [2] so it is necessary that of the [parts of philosophy] there are the primary [philosophy]
 [*tina protēn*] and also [the philosophy] which comes next [*echomenēn*], [3] for being [*to
 on*] exists with its genera right away [*euthus*]. [4] This is why the *epistēmai* [under
 consideration, i.e., the bodies of knowledge which are species of the *epistēmē* of being
qua being] also follow these [*toutois*, sc. the genera of being]. [5] For the philosopher is
 said just like the mathematician: for [mathematics] too has parts, and in mathematics [*en
 tois mathēmasin*] there are the primary [*epistēmē*], and the secondary *epistēmē*, and the
 other [*epistēmai* which go] in a series [*allai ephexēs*].

First of all, it is very likely that “philosophy” and the “philosopher” in this passage refer to the science of being *qua* being and the practitioner of this science; otherwise, we would have an abrupt change of topic (we talk about the science of being *qua* being before and after this passage; why would we start talking about a more general or a more specific discipline in the middle?). Besides, both before this passage (1003b15-19),³⁰² and after this passage (1004a31-b26)³⁰³ Aristotle uses “philosophy” and the “philosopher” to mean the science under consideration and the practitioner of this science. Also, it seems that “substance” in (1) means being in general, not only the category of substance; otherwise, I find it difficult to understand

³⁰¹ I translate below following Jaeger in deleting this phrase but given that I argue below that the relevant kinds of being in this context are the categories and the relevant kinds of the one here correspond to the categories, keeping this phrase would be consistent with my overall argument.

³⁰² I say more on this passage below.

³⁰³ In this passage, Aristotle responds to the fifth aporia of *Met. B* (the initial statement: B.1 995b18-27; the later statement: B.2 997a25-34; the Kappa version: K.1 1059a29-38). In all three statements of this aporia, we face the question of whether there is one and the same study (*theōria*) of substances and their *per se* attributes, with the implication that this one and the same study would be the science under consideration. At Γ.2 1004a31-b26, Aristotle provides an affirmative answer to this question; he initially states that the “philosopher” studies “these things and substance [*peri toutōn kai ousias*]” but further down, this is rephrased as the *per se* attributes of being *qua* being (and of the one *qua* one). More on this, see below.

how (3) explains or justifies what comes before. There is at least one other and related context in the *Metaphysics* where Aristotle seems to use “substance” and “being” interchangeably.³⁰⁴

So, T1 can be paraphrased as follows using these observations: (1) there are as many species of the *epistēmē* under consideration as there are of beings. In particular, (2)-(4) a species of being is primary and the others come after it, and the species of the *epistēmē* under consideration which grasps the primary species of being is primary and the species of this *epistēmē* which grasps the next species of being comes next because the species of this *epistēmē* are ordered according to the order of the species of being that they grasp. (5) A species of this *epistēmē* is primary while its other species come after it, and in this respect, this *epistēmē* is like mathematics because in mathematics there is a primary *epistēmē*, then a secondary *epistēmē*, and the other *epistēmai* come in a series. For my current purpose, it is not essential to determine exactly what Aristotle means when he talks about mathematics in (5); all I need is that just like the science under consideration, mathematics also has species which are ordered by priority and posteriority (in the case of mathematics, there are the first, the second, the third etc. *epistēmai*,³⁰⁵ while in the case of the science under consideration, it seems from (2) that there are only the primary and the secondary *epistēmai*.)

It makes sense that the species of being here refer to the categories because both in *Met.* Γ.2, as mentioned above, as well as in the rest of the *Metaphysics*, Aristotle makes it abundantly clear that substance is primary among the beings and the other categories are secondary. After arguing at the beginning of Γ.2 that there is a science of not only things which are said univocally but also of things said by focal equivocation, and that in the case of beings, the focal thing is substance, Aristotle concludes at 1003b15-9 (which comes right before the account under

³⁰⁴ As I mentioned in the previous footnote, the question in the fifth aporia, in effect, is whether this science studies both substances and their *per se* attributes, while it is rephrased in the Γ.2 passage as whether this science studies being qua being and its *per se* attributes (and of the one *qua* one; more on the relation between being and the one, see below). Besides, *ousia tinos*, i.e., the essence of something (*Met.* Δ.8 1017b21-3, more extensively in *Met.* Z (for a programmatic statement, see Z.3 1028b33-6)) is also used to refer to the things outside the category of substance (as accidental things also have their essences, even if it is in a secondary way (while the substances have their essences in a primary way)), and by “*ousia*” here, Aristotle might mean the *ousia* of something, i.e., the *ti esti* of that thing (whether it is a substance or an accident strictly speaking).

³⁰⁵ So it seems that as in the *grammatikē* example mentioned above, these *epistēmai* of mathematics are not the branches of mathematics like arithmetic and geometry but the bodies of knowledge grasping a species of the objects of mathematics while these species are ordered in a series: so they can be the kinds of numbers, or perhaps the polygons (with the idea being that the triangle is the first kind, the quadrilateral figure is the second kind because it can be analyzed into two triangles, the pentagon is the third kind because it can be analyzed into a triangle and a quadrilateral figure etc.).

consideration that each species of being is studied by a species of the *epistēmē* which studies being *qua* being as a whole): “so it is clear that there is one [*epistēmē*] which studies beings *qua* beings, but in every case *epistēmē* is, strictly speaking [*kuriōs*], of the primary thing, and [next] of the other things which depend on [the primary thing]; so, if this [primary thing] is substance, the philosopher must grasp the principles and the causes of the substances.” In other words, this science studies the species of being *qua* being, but it studies “most strictly (*kuriōs*)” the primary thing here, which is substance. In fact, Aristotle observes this research program faithfully when he starts to articulate his proper metaphysical account: as he argues in Z.1 (and reminds the reader at the beginning of Θ.1), being is said in many ways, as it is said of substance, and quantity, and quality etc., but it is said primarily of substances and secondarily of the other categories, and the investigation of the causes and principles of being *qua* being can focus on the investigation of the causes and principles of substances in particular because other kinds of beings, i.e., those in the accidental categories depend on substances.

I mentioned above that to explain his claim that there is an *epistēmē* which is one in genus and studies being *qua* being as a whole while the species of this *epistēmē* study the species of being, Aristotle presents an account at 1003b22-4a9, and skipping the initial and longer part of this account (at b22-a2), I went ahead to discuss the conclusion of it (quoted as T1 above). Now, let me go back to the part I skipped. In this intervening account, Aristotle first argues for at least the coextensiveness of (the relevant senses of) being and unity, but as I defend when I address this argument in greater detail in Chapter 3, he argues for a stronger sort of equivalence between being and unity (1003b22-34). After arguing for the equivalence between being and unity, he concludes that there are as many species (*eidē*) of unity as there are of being (1003b33-4) and he adds, “concerning which [*peri hōn*] it belongs to the same *epistēmē* in genus to investigate what they are [*ti estī*], I mean, e.g., concerning [*peri*] the same [*tautou*], the similar [*homoiou*], and the other things of this sort;” Aristotle ends the intervening account by implying that the contraries of these are also studied by the same *epistēmē* (1003b34-1004a2).

Recall that this intervening account is part of Aristotle’s explanation of the claim that the *epistēmē* under consideration is one in genus and studies being *qua* being as a whole while the species of this *epistēmē* study the species of being, and the conclusion of this explanation quoted as T1 above seems to suggest that the relevant species of being are substance and the other

categories with substance being the primary thing studied by the *epistēmē* under consideration. In agreement with this, in the *Iota 2* version of this argument for the equivalence between being and unity with the conclusion that there are as many kinds of (the relevant sense of) unity as there are of being, these kinds of being seem to be the categories (1054a13-19). When Aristotle talks about the equivalence between being and unity (saying that they are said in the same number of ways, or implying something to that effect), the relevant kinds of being or the ways in which being is said are often given as the categories (see *Met.* Δ.10 1018a35-8 (about which I talk below), Z.4 1030b10-2; also compare H.6 1045a36-b2). So right after the being-unity equivalence argument in Γ.2, at 1003b34-6 we would expect Aristotle to talk about the species of being, i.e., the categories. However, he actually talks about “the same, the similar and the other things of this sort” as the things studied by the same *epistēmē* in genus, but below in Γ.2, he seems to count “the same” and “the similar” among the kinds or the *per se* attributes of unity. He states below that the opposites are studied by the same science, and “the one is opposed to multiplicity;” so, “the opposites of the things mentioned before [*tois eirēmenois*], [namely], the other [*heteron*], the dissimilar [*anomoion*], the unequal [*anison*], and the other things which are said in respect of these or in respect of multiplicity and the one [*kata tauta ē kata plēthos kai to hen*] are studied by the mentioned science [sc., the science under consideration]” (1004b9-10, 17-20). We know from *Met.* Δ.9 1018a9-11 and 18-9 that the other is the opposite of the same and the dissimilar of the similar; likewise, Aristotle states at *Iota 3* 1054a20-1, 29-32 that the one is the opposite of multiplicity, and while the same, the similar, and the equal “pertain to the one [*tou men henos*],” apparently their opposites, the other, the dissimilar, and the unequal “pertain to multiplicity [*tou de plēthous*].” Other passages can also be supplied to show that the opposite of the other is the same, the opposite of the dissimilar is the similar, and the opposite of the unequal is the equal. So “the things mentioned before” which are the opposites of the other, the dissimilar, the unequal etc. should be “the same, the similar, and the other things of this sort” at 1003b34-6 and “the same, the similar, and the other things of this sort” should be the kinds or the *per se* attributes of the one.

In my more detailed discussion of the being-unity equivalence argument in Chapter 3 Section 3, I will provide other reasons to accept that Aristotle means (the relevant senses of) being and unity to be equivalent in a sense stronger than mere coextensiveness, but one reason to assume such a strong equivalence is precisely this: it seems that we cannot provide a good explanation for why

Aristotle gives examples of the kinds (or the *per se* attributes) of unity where we expect him to give examples of the kinds of being and in effect conflates the kinds of being and those of unity at 1003b34-6, unless we assume that unity and being are equivalent in some strong sense so that in many contexts they can be used interchangeably. Coextensiveness seems to be too weak to justify providing the kinds (or the *per se* attributes) of the one instead of the kinds of being as expected at 1003b34-6. We can have accidentally coextensive terms but conflating them can lead to embarrassing mistakes. Yet if we have terms which are necessarily coextensive because of some mutual implications between their relevant senses, in principle, we can move from the inferences using one to the inferences using the other in a wide range of contexts because their necessary connection would allow valid substitutions between them. I will argue in Chapter 3 Section 3 that the being-unity equivalence argument in $\Gamma.2$ (and its version in Iota 2) is meant to establish some sort of necessary connection between (the relevant senses of) being and unity.³⁰⁶ Also, below I will present further instances of Aristotle's apparent conflation of being and unity in the rest of $\Gamma.2$, or places where Aristotle does not seem to think it important to clearly distinguish them, but first let me spell out why Aristotle seems to take "the same, the similar, and the other things of this sort" to be the relevant kinds or the *per se* attributes of unity that correspond to the relevant kinds of being, i.e., the categories. Aristotle asserts at *Met.* $\Delta.15$ 1021a9-12 that the same, the similar, and the equal "all are said in respect of the one [*kata... to hen*], for things are said to be the same if their substance is one, similar if their quality [*poiotēs*] is one, and equal if their quantity [*to poson*] is one." So there is some relevant sense of unity that can be said of the category of substance, or quality, or quantity, or presumably other categories too, and when this sense of unity holds of two (or more) things' substance (or the substance of the same thing treated twice³⁰⁷), we call them the same; when this sense of unity holds of two things' quality, we call them similar; when this sense of unity holds of two things' quantity, we call them equal. Along these lines, in the *Categories*, Aristotle uses sameness to formulate the distinguishing feature (*idion*) of substances (*Cat.* 5 4a10-b19), equality for quantities (*Cat.* 6

³⁰⁶ The primary reason is that this argument is the only explicit argument Aristotle presents to justify that the science presented in the *Metaphysics* is a genuinely single science and the science of being *qua* being also also studies the one *qua* one (and its kinds or *per se* attributes). As Aristotle makes it clear in many places including *Met.* E.2, there is no science of accidental connections. So if there were no necessary connections between (the relevant senses of) being and the one, there cannot be a single science which studies both being and the one.

³⁰⁷ See *Met.* $\Delta.9$ 1018a7-9. More on the surrounding discussion of the senses of the same in *Met.* $\Delta.9$, see Chapter 2 Section 4.

6a26-35), and similarity for qualities (*Cat.* 8 11a15-9). Whether we have distinct terms for them or not, it seems that similar things can be said about the other categories too. So it seems that the same is the kind or the *per se* attribute of the relevant sense of unity in the category of substance, the similar in the category of quality, and the equal in the category of quantity. If it is understood in this way, at the end of the being-unity equivalence argument in *Γ.2*, namely at 1003b34-6, Aristotle would be mentioning the kinds or the *per se* attributes of (the relevant sense of) unity corresponding to the kinds of (the relevant sense of) being, i.e., the categories.

Aristotle says at *Met.* Iota 3 that the same, the similar, and the equal “pertain to the one [*tou men henos*]” while their opposites, the other (*heteron*), the dissimilar (*anomoion*), and the unequal (*anison*) “pertain to multiplicity [*tou de plēthous*]” which is the opposite of the one (1054a20-1, 29-32), but he does not explicitly associate the same with the category of substance, the similar with the category of quality, and the equal with the category of quantity here. He discusses the senses of the same and those of the similar below in this chapter, and by and large the senses of the similar can be interpreted as pertaining especially to the category of quality (1054b3-13).³⁰⁸ Aristotle presents an account of the senses of the similar in *Met.* Δ.9 too; it is said here that things are said to be similar if they “have been affected [*peponthota*]” by the same thing in every way, or in most ways, or because they have one (and the same) quality (*poiotēs*) (1018a15-7). Aristotle does not characterize the equal in these chapters, but it seems that his usual practice is to apply this term to quantities or quantified things insofar as they are quantified. In other words, Aristotle seems to maintain in other places too that broadly speaking, similarity applies to qualities and equality applies to quantities.

By contrast, Aristotle does not systematically restrict sameness to substances. Aristotle asserts at *Met.* Δ.9 1018a4-9 that things are said to be the same “*per se* in as many ways as the one” and that sameness (*tautotēs*) is a kind of unity or something very similar to unity (*henotēs tis*).³⁰⁹ Also, in the discussion of the senses of the same in *Top.* I.7, he appears to use the same and the

³⁰⁸ For the sense of the similar used in mathematical contexts (1054b3-7), I assume that it is understood as having the same shape and that shape is a kind of quality. For the sense of the similar presented at 1054b7-9, I assume that the *eidos* which comes in degrees is a qualitative form.

³⁰⁹ These two translations depend on whether the “*tis*” here indicates a kind or it is a *tis alienans*.

one practically interchangeably.³¹⁰ From these passages and others, it appears that Aristotle takes “the same” to simply mean some two-place cases of the one, or something very close to this, and his frequent use of “one and the same” as a set phrase is an indication of this. So, we seem to have two senses of the same: according to the general sense, “the same” simply means some cases of unity or perhaps the *per se* attributes of these cases of unity. It seems that this general sense of the same applies to all the categories,³¹¹ but insofar as it applies specifically to the category of substance, we obtain the special sense of the same we find in *Met.* Δ.15 as described above. It stands to reason that when the same is mentioned along with the similar in the Γ.2 passage at issue, it is used in this special sense, pertaining particularly to the category of substance.

I suggest in Chapter 3 based on the Iota 2 version of the being-unity equivalence argument and other relevant passages in the *Metaphysics* that even though it is not entirely clear, it is plausible that Aristotle means the relevant kinds of unity that correspond to the categories to be the kinds of the sense of the one *qua* the first measure of a genus. As I explain in greater detail there, this sense of unity primarily applies to a genus or a species, or rather, to an individual insofar as it is

³¹⁰ That said, as can be seen from the discussion of these two passages in Chapter 2 Sections 4 and 5, it is not easy to pin down the *exact* relation between the *per se* senses of the unity distinguished in *Met.* Δ.6 and the *per se* senses of the same distinguished at *Met.* Δ.9 1018a4-9 or the senses of the same distinguished in *Top.* I.7.

³¹¹ Apparently according to this general sense, “the same” is applied to qualities and used in the characterizations of some senses of the similar in Δ.9 and Iota 3 (at 1018a15-6: “those things are said to be similar which have been affected by the same thing in every way;” at 1054b9-10: things are said to be similar “if their affect [*pathos*] is one and the same in form”). Also, it seems that according to this general sense of the same, Aristotle asserts that everything which is (*on*) and is one (*hen*) is the same as or other than something which is and is one. In other words, the same or the other applies to everything taken twice or every two things to which being and unity apply (1054b14-23). This makes it appear that the same and the other are the *per se* attributes of (the relevant senses of) being and unity, but it also seems that Aristotle takes them to be equivalent to (some sense of) the one and not one: to justify that the same and the other apply to everything to which being and unity applies, Aristotle says, “whatever by nature is [*on*] and is one [*hen*] is either one or not one” with something which is and is one (1054b21-2). If I am right in taking the second “one” (and “not one”) to be used in two-place contexts, and since the first “one” (and “being”) seem to be used in one-place contexts, we can perhaps say that the same is equivalent to the sense of the one here used in two-place contexts, while it is a *per se* attribute of the sense of the one here used in one-place contexts (which seems to be equivalent to being). In any case, in this Iota 3 account, whether this general sense of the same is simply some cases of the one or it is a *per se* attribute of some cases of the one, together with the other, it ranges over all the categories just like (the relevant senses of) being and the one. We find a similar statement in *Met.* Δ.10 too: following his discussion of the same, the other, and some related terms, Aristotle says “since the one and being are said in many ways, also the other things which are said in respect of these [sc., the one and being, *kata tauta*] necessarily follow [them], with the result that the same, the other, and the contrary differ along with the categories [ὥστε καὶ τὸ αὐτὸν καὶ τὸ ἕτερον καὶ τὸ ἐναντίον [ὥστ’] εἶναι ἕτερον καθ’ ἑκάστην κατηγορίαν]” (1018a35-8). In other words, the same, the other, and the contrary are said *kata* being and unity, and as we have a different kind of being and unity for each category, we have a different kind of the same, the other, and the contrary for each category.

considered as an instance of this genus or species, not insofar as it is considered as a determinate individual, i.e., Socrates taken as *a* human, not as this particular human being called Socrates. For example, the horse kind, or an individual horse *qua* horse is one in this sense, because horses are measured by it (e.g., since the five things in this field instantiate the horse kind, ‘measuring’ them by the horse kind (or an individual horse *qua* horse), we can say that there are five horses in this field). It is also similar in the other categories. Since the categories themselves are the highest genera and there is no genus above them, properly speaking, there is no measure of the beings in the different categories, but each measure measures things under one of the categories. In this sense, there are as many highest kinds of measures, and the highest kinds of the one according to this sense of unity, as the categories. So, assuming that the relevant senses of the same, the similar, and the equal are characterized in the way that they are characterized at *Met.* Δ.15 1021a9-12, we can understand them as follows. If we have two substances, they fall under a genus in the category of substance (or liminally under the category of substance itself). This genus (or species) common to them measures them. So, in this sense, this genus is one as their measure. But insofar as these two things share that genus which is their substance (or part of their substance in the sense of essence: see *Met.* Δ.8 1017b21-3), these two things are also the same. Similarly, if we have two things with the same kind of quality, say, we have two black things, the color kind black measures the particular instances of black in them, so with respect to their particular qualities, the kind black is one as their measure. But insofar as these two things share the same kind of quality, i.e., the color kind black, they are similar. Similar examples can be formulated for equality, and for the remaining categories too.

So, the same, the similar, the equal etc. are the kinds or the *per se* attributes of the one corresponding to the categories, and if we assume that the cases of being as divided into the categories and the relevant cases of unity correspond to each other in some strong sense that goes beyond mere coextensiveness, it would not be as surprising for Aristotle to mention “the same, the similar, and the other things of this sort” at 1003b34-6 at the end of the being-unity equivalence argument in Γ.2 while from the context we expect him to talk about the kinds of being, i.e., the categories.

It appears that also in other places in Γ.1-2, Aristotle does not seem to think that he commits a major mistake by not clearly distinguishing the kinds or the *per se* attributes of being and those

of unity, and we can explain this if we assume some sort of strong equivalence between being and unity so that in a wide range of contexts they can be used interchangeably. As mentioned above in Footnote n.303, at *Met.* Γ.2 1004a31-b26, Aristotle responds to the fifth aporia of *Met.* B. The fifth aporia, especially according to its formulation at B.2 997a25-34 and at K.1 1059a29-38, concerns only the question of whether it belongs to one science to investigate substance (i.e., being) and its *per se* attributes. At the beginning of his affirmative answer to this aporia in Γ.2, Aristotle states that “it is clear, then, that providing accounts of these things [*peri toutōn*] and of substance belongs to one [science]... and being able to investigate all these belongs to the philosopher” (1004a31-b1). In the account that comes right before this (1004a10-31) Aristotle states that multiplicity is opposed to the one and then he discusses the kinds or the *per se* attributes of multiplicity which are opposed to those of the one. It appears that here at 1004a31-b1 the kinds or the *per se* attributes of unity and multiplicity are considered to be the *per se* attributes of substance (i.e., being). Right after this, apparently giving examples of the *per se* attributes of substance (i.e., being) investigated by the science under consideration, i.e., the science of the philosopher, he says, “for if it does not belong to the philosopher [to investigate these], who would investigate [*episkepsomenos*] whether Socrates and sitting Socrates are the same, or whether one thing is the contrary of one thing, or what the contrary means, or in how many ways it is said” (1004b1-4; compare with *Met.* B.1 995b25-7). As I mentioned above, it seems that more properly we should say that the same is a kind or a *per se* attribute of unity. It is mentioned above in Γ.2 that the contrary (*to enantion*) is a kind or a *per se* attribute of multiplicity (1004a20-2). After this, Aristotle sums up his claims in response to the fifth aporia by saying “so since these [*tauta*] are the *per se* attributes [*kath’ hauta... pathē*] of the one *qua* one [*tou henos hē(i) hen*] and [*kai*] of being *qua* being, but not *qua* numbers or lines or fire, it is clear that knowing what they are [*ti esti*] and their *per se* attributes [*ta sumbebēkot’ autois*] belongs to that science” (1004b5-8). The immediate antecedent for “these [*tauta*]” seems to be the same and the contrary, and maybe also the other kinds or *per se* attributes of unity and multiplicity. So, it seems that the underlined “and [*kai*]” is an exegetical *kai* and the *per se* attributes of the one *qua* one and the *per se* attributes of being *qua* being are treated as practically meaning the same thing here. Also, developing the same idea further, i.e., that one science studies the *per se* attributes of a genus (e.g., arithmetic studies the *per se* attributes number *qua* number), Aristotle says that the science under consideration, i.e., the science of the philosopher, studies the *per se*

attributes of being *qua* being (1004b10-7), as if it does not make a difference whether we talk about the *per se* attributes of the one *qua* one and of being *qua* being, as he does right above at 1004b5-8, or simply about the *per se* attributes of being *qua* being, as he does here.

Another place where Aristotle appears to conflate being and unity in *Met.* Γ.2 comes up in the context of Aristotle's argument to show that it belongs to one science to study being *qua* being and its *per se* attributes from the views of the earlier philosophers that all beings are composed of contraries or that their principles are contraries. At 1004b27-8, Aristotle claims that all the contraries (*enantia*) "are referred back [*anagetai*] to being and non-being [*to on kai to mē on*], and [*kai*] to the one and multiplicity [*hen kai plēthos*]." The underlined "and" seems to be an epexegetic "and" because right after this he mentions as an example that "rest pertains to the one and motion pertains to multiplicity," mentioning only the one and multiplicity (1004b28-9). He then goes on to argue that pretty much all the philosophers agree that beings and substances or their principles are contraries; mentioning some such contrary principles proposed by earlier philosophers as examples, Aristotle says "and also all the other [contraries] are clearly referred back to the one and multiplicity" (1004b33-4). In other words, even though Aristotle claims at the beginning of this account that the contraries are referred to being and non-being, and unity and multiplicity, in the rest of the account, he just talks about the contraries being referred to unity and multiplicity alone, as if he assumes that unity and multiplicity alone mean practically the same things as being and non-being and unity and multiplicity together.

As was mentioned above, when Aristotle talks about the fact that there is one science of all things that are said by focal equivocity, and that this science studies what is said *pros* substance, he also mentions the privations and negations of substance and of the things said *pros* substance (1003b8-10). As also mentioned above, he explicitly states more generally at 1004a9-10 that there is one science studying the opposites (*antikeimena*); he adds that "the one is opposed to multiplicity" so "the opposites of the things mentioned before, [namely], the other, the dissimilar, the unequal, and the other things which are said in respect of these or in respect of multiplicity and the one [*kata tauta ē kata plēthos kai to hen*] are studied by the mentioned science [sc., the science under consideration]" (1004b10, 17-20). Since difference (*diaphora*) is a sort of the other, and the contrary (*enantion*) is a sort of difference, these are also studied by the same science (1004b20-2). In the middle of this account, at 1004a10-4, Aristotle also adds that there is

one science studying contradictory (*apophasis*) and lack (*sterēsin*) because lack is a special sort of contradictory and “in both cases [*amphoterōs*] the one [*to hen*] of which it is the contradictory or the lack is studied.” It is possible that “*to hen*” in this claim refers to the one thing which is studied by a science rather than unity specifically, and that the claim as a whole simply means without any special reference to unity that the contradictory of something is said *pros* that thing (i.e., “not X” is said *pros* X), and the lack is a special sort of contradictory, so if a science studies X, it also studies the contradictory and the lack of X too. But since this account comes right in the middle of Aristotle’s discussion of the opposite of the one, multiplicity, and their kinds or *per se* attributes, it seems more likely that Aristotle meant the general study of the contradictory and the lack to be associated with the study of unity and multiplicity and their kinds or *per se* attributes; indeed *Met.* Δ.9-10 discusses all these topics together (along with the same and the similar), and so does Iota 3-10.

In short, al-Fārābī’s account of the ontology part of metaphysics in *On the Aims* that it studies being and unity, their opposites non-being and multiplicity, and their kinds, and their *per se* attributes have a clear basis in *Met.* Γ.1-2, even though the boundary between the kinds and the *per se* attributes are not always clearly delineated in Γ.1-2 unlike in al-Fārābī’s *On the Aims* in T5. Moreover, in Γ.1-2, the boundary between being and unity is also sometimes blurred, but Aristotle seems to find this tolerable because, as I started to argue here and will expand on in Chapter 3, there is a strong equivalence between (the relevant senses of) being and unity which allows us to infer claims about being from claims about unity and vice versa in a wide range of contexts. In *On the Aims*, al-Fārābī presents being and unity on a par with each other and this is consistent with the equivalence between being and unity in the Γ.1-2 account (as well as in other places in the *Metaphysics*). Yet, unlike the Γ.1-2 account, in T5 in *On the Aims*, al-Fārābī clearly distinguishes the opposite, the kinds, and the *per se* attributes of being from those of unity.

We can see that the account of the kinds and the *per se* attributes of being and unity and their opposites sketched out in Γ.1-2 *does* inform or project the core set of the terms discussed in *Met.* Δ, and some of these, in turn, outline the structure of the rest of the *Metaphysics*. Moreover, as I explain below, we can understand why al-Fārābī understood most of the remaining terms

discussed in *Met. Δ* as serving the discussion of ontological ideas;³¹² recall that al-Fārābī presents the subject-matter of *Met. Δ* in this way in *On the Aims*.³¹³ We will also see more concretely that compared to Aristotle, al-Fārābī has a more regimented understanding of what is to be covered in ontology as presented in *On the Aims* discussed above in Section 1, and since al-Fārābī thinks that in *Met. Δ* Aristotle discusses these ontological ideas, some mismatch between the terms *actually discussed* in *Met. Δ* and the terms al-Fārābī would *allow to be discussed* in *Met. Δ* as the place where the ontological ideas are presented will surface.

First of all, Δ.6 distinguishes the senses of unity and at the end, also briefly mentions the senses of multiplicity. Δ.7 distinguishes the four senses of being: being *per accidens*, being as divided into the categories, being as true, and being as potentially and actually (at least the second sense is called being *per se* but it appears that all the remaining three senses are considered *per se* senses of being). As argued in E.2-4, the *per accidens* sense of being and the sense of being as true are not relevant for this science. Z.1 starts with the sense of being as divided into the categories and argues that our investigation of this sense of being should focus on the category of substance because the remaining categories depend on it. The rest of Z and H investigate substance. At the beginning of Θ.1, Aristotle reminds that he has discussed substance which is primary and on which the other categories depend and announces the discussion of potentiality and actuality. This discussion is carried out in Θ.1-9 and the last chapter of Θ, i.e., Θ.10 briefly discusses truth and falsity before moving onto the discussion of the one and multiplicity and the

³¹² When I say that the account of the subject-matter of metaphysics presented in Γ.1-2 informs or projects the core set of the terms discussed in *Met. Δ*, I do not mean a strong determination in the way that, e.g., someone who reads Γ.1-2 without reading *Met. Δ* would be able to correctly predict most of the terms that are actually discussed in *Met. Δ*. That said, as I explain in the following building on the preceding discussion, some of the terms that are explicitly said to be studied in metaphysics in Γ.1-2 are actually discussed in *Met. Δ*, and if we also take into consideration other relevant claims Aristotle makes elsewhere, the account of the subject-matter of metaphysics in Γ.1-2 provides a decent framework to understand why Aristotle ended up discussing a majority of the terms he discusses in *Met. Δ* rather than some other set of philosophically interesting terms he could discuss. I do not think that this is a particularly surprising claim because even if we consider *Met. Δ* to be some sort of philosophical dictionary, if it is not meant to cover interesting philosophical terms in general but only those that are relevant to the science under consideration, it would not be surprising if, in choosing the terms to be discussed in *Met. Δ*, Aristotle was guided by his understanding of the topics to be discussed in this science which are most extensively presented in Γ.1-2. I will explain in greater detail what I mean when I say that the account of the subject-matter of metaphysics presented in Γ.1-2 “informs or projects” the core set of the terms discussed in *Met. Δ* and that al-Fārābī’s reading of *Met. Δ* as a discussion of ontological terms is an “understandable” reading of it in a future work expanding on this appendix. I would like to thank Christof Rapp for pressing me to be more precise about these claims when I presented a version of this appendix to an audience at the Munich School of Ancient Philosophy in May 2024. I will make greater use of his comments and the other useful comments I received from other participants in my future work expanding on this appendix.

³¹³ See Footnote n.282 in Section 6 above.

related terms in Iota. In the first half of Λ , we have a discussion of the principles of the perceptible substances which are moved and in the second half of Λ , Aristotle discusses the unmoved immaterial substances which are the causes of motion for the heavenly bodies and through them for everything else in the sublunar realm. *Met.* M and N discuss the wrong views on substances and causes and principles of substances articulated by other philosophers.

As mentioned above, Δ .9-10 discusses the kinds or the *per se* attributes of some relevant senses of the one and its opposite, multiplicity (i.e., the same, the other, the different, the similar, and the dissimilar), and the related ideas of opposition (contradictories, possession and lack, contraries; correlatives are also mentioned briefly as a kind of opposition). Also, Δ .22 discusses lack and the discussion of having or possessing (*to echein*) in Δ .23 appears to contain remarks relevant to the sense of possessing that is opposed to lack. As mentioned above, *Met.* Iota as a whole discusses the senses of unity and multiplicity as well as all these other ideas closely associated with unity and multiplicity.

About the senses of being, and the kinds of the sense of being as divided into the categories, i.e., the categories themselves, we have several chapters in *Met.* Δ . About the categories, we have Δ .8 on substance, Δ .13 on quantity (*poson*), Δ .14 on quality (*poion*), Δ .15 on relatives (*pros ti*), and the discussion of having (*to echein*) in Δ .23 seems to contain remarks relevant to the category of having (*to echein*). Some senses of disposition (*diathesis*) (discussed in Δ .19), condition (*hexis*) (Δ .20), and affect (*pathos*) (Δ .21) can be considered under quality. The opposite of the sense of being as true, i.e., falsehood (*pseudos*) is discussed in Δ .29 (I briefly address below what seems to be the reason why al-Fārābī does not mention true and false among the kinds or *per se* attributes of being in *On the Aims*). In connection with the sense of being as potentially and actually, Δ .12 discusses the senses of “potentiality” / “power” (*dunamis*) and the related term “potential” / “possible” (*dunaton*).

As mentioned above in Section 6, in *KH* al-Fārābī treats actuality and potentiality to be kinds or *per se* attributes of his sense of being that applies to the extramental reality, corresponding to Aristotle’s being *per se* as divided into the categories. Potentiality and actuality are also listed among the *per se* attributes of being in T5 above in *On the Aims*.

Aristotle does not mention *per accidens* (*kata sumbebēkos*) and *per se* (*kath’ hauto*) among the kinds or the *per se* attributes of being or unity in Γ .1-2. Al-Fārābī does not mention them among

the ontological ideas in *On the Aims* either. Yet, in *Met.* Δ.6 and 7, Aristotle divides the senses of unity and the senses of being into those which are *per accidens* (*kata sumbebēkos*) and those which are *per se* (*kath' hauto*), and as mentioned in Section 6 above, al-Fārābī treats *per se* (*bi-dhātihī*) and *per accidens* (*bi-l- 'araḍ*) as kinds or *per se* attributes of being in *KH* 99-100.

Aristotle discusses the senses of “by virtue of which” (*to kath' ho*) and “by virtue of itself,” i.e., “*per se*” (*to kath' hauto*) in Δ.18, and he discusses the senses of “accident” (*sumbebēkos*) in Δ.30.

In Γ.2 at 1005a11-3, Aristotle implies that not a particular science like geometry but the science under consideration studies “the contrary, the perfect [*teleion*], the one, being, the same, and the other.” Aristotle does not state here that the perfect is a *per se* attribute of being specifically, but this claim seems to be al-Fārābī’s ground for taking the perfect (*al-tāmm*) and its opposite, the deficient (*al-nāqis*) among the *per se* attributes of being as can be seen in T5 in *On the Aims*.

Aristotle discusses the perfect (*teleion*) in Δ.16 and the mutilated (*kolobon*) in Δ.27.

At the conclusion of Γ.2, Aristotle says,

T2 *Met.* Γ.2 1005a13-8

ὅτι μὲν οὖν μιᾷς ἐπιστήμης τὸ ὄν ἢ ὄν θεωρῆσαι καὶ τὰ ὑπάρχοντα αὐτῷ ἢ ὄν, δῆλον, καὶ ὅτι οὐ μόνον τῶν οὐσιῶν ἀλλὰ καὶ τῶν ὑπαρχόντων ἢ αὐτὴ θεωρητική, τῶν τε εἰρημένων καὶ περὶ προτέρου καὶ ὑστέρου, καὶ γένους καὶ εἶδους, καὶ ὅλου καὶ μέρους καὶ τῶν ἄλλων τῶν τοιούτων.

So, it is clear that it belongs to one science to study being *qua* being and its *per se* attributes *qua* being, and [it is also clear] that the same [science] studies [*theōrētikē*] not only the substances but also [their] attributes, both [the attributes] mentioned before and also prior [*proterou*] and posterior [*husterou*], genus and species, whole [*holon*] and part [*meros*], and the other things of this sort.

First of all, “and the other things of this sort” indicates that the ideas mentioned above in Γ.2 and those mentioned in this passage are not exhaustive of all the ideas studied in this science.

Second, the mention of the prior and the posterior here seems to be al-Fārābī’s ground for considering them among the *per se* attributes of being in *On the Aims*. The prior and the posterior are discussed in Δ.11.

Genus and species are also mentioned in T2 among the things studied in metaphysics. Aristotle discusses genus in Δ .28. Genus and species are not mentioned in al-Fārābī's account of the subject-matter of ontology in *On the Aims*. There might be a deeper reason why al-Fārābī does not mention genus and species among the *per se* attributes of being (or unity) even though they are explicitly mentioned in Γ .2.³¹⁴ To put it extremely briefly, as discussed in Section 6, according to al-Fārābī's account in *KH*, we have first thoughts (*ma'qūl* = *noēma*) which directly represent aspects of reality and we have second thoughts which are directly thoughts of some other thoughts. Logic concerns itself with second thoughts and other sciences including metaphysics concern itself with first thoughts. In *KH* 7, al-Fārābī explicitly mentions that genus and species are second thoughts (because they refer to first thoughts insofar as the first thoughts denote many things in respect of what they are, and of such first thoughts, something is called a species or a genus depending on whether it is relatively more general or more specific). So genus and species are studied by logic, not by metaphysics, strictly speaking and this might be the reason why al-Fārābī does not mention genus and species among the things studied in metaphysics in *On the Aims* even though genus and species are explicitly mentioned by Aristotle in T2.

Moreover, the whole and the part are also mentioned by Aristotle in T2 among the things studied by metaphysics, and the part is discussed in Δ .25, and the whole in Δ .26. Al-Fārābī does not explicitly mention the whole and the part among the *per se* attributes of being (or unity) in *On the Aims*. Nevertheless, he might have considered them to be closely associated with the perfect and the deficient. Alternatively, it is possible that he considered the quantifier senses of whole / all and part to belong to logic rather than metaphysics.

Aristotle does not mention the necessary (*anagkaion*) and the possible (*dunaton*) among the kinds or the *per se* attributes of being or unity in Γ .1-2 nor does al-Fārābī in *On the Aims*. But it seems that anything that *is* or *is something* is so necessarily or possibly. So, it is possible that Aristotle thought the necessary and the possible to be among the *per se* attributes of being, or that he considered them along with the other causal terms discussed in *Met.* Δ that I address

³¹⁴ I am inspired to make the following observations, e.g., that genus and species are second thoughts and are more properly studied in logic than in metaphysics by Stephen Menn's suggestion cited in Section 6 Footnote n.292 above that the sense of being *qua* circumscribed by an extramental quiddity is the metaphysical sense of being, properly speaking, and the sense of being *qua* true is rather the logical sense of being.

below. Aristotle discusses the necessary in *Met.* Δ.5, and as mentioned above, he discusses the senses of “*dunaton*” (possible / potential) under Δ.12. Al-Fārābī does not mention the necessary and the possible among the things studied by ontology in *On the Aims* possibly because he considered the necessary and the possible to be second thoughts which are studied in logic, not in metaphysics.

As I reminded the reader above, al-Fārābī does not mention truth and falsity among the kinds or *per se* attributes of being in *On the Aims*. As presented in Section 6, al-Fārābī does discuss the sense of being *qua* true in *KH*. Yet, it is possible that he has a similar reason for not counting truth and falsity among the kinds or *per se* attributes of being in *On the Aims* in that truth and falsity are second thoughts (or they express a relation between a thought and an aspect of extramental reality), and as such, truth and falsity are more properly studied in logic rather than in metaphysics.

Finally, we have a bunch of causal terms discussed in *Met.* Δ. We have principle (*archē*) in *Met.* Δ.1, cause (*aition*) in Δ.2, element (*stoicheion*) in Δ.3, nature (*phusis*) in Δ.4, and “from something” (*to ek tinos*) in Δ.24. Aristotle does not mention them among the kinds or *per se* attributes of being (or unity) in Γ.2. He makes clear in several places including at Γ.1 1003a31-2 and E.1 1025b2-3 that the science under consideration studies the ultimate causes and principles of beings *qua* beings. There does not seem to be another science better suited to giving an account of causal terms than this one. Alternatively, or perhaps along with this, Aristotle might have considered cause and effect to be *per se* attributes of being if he held the principle formulated in Plato’s *Sophists* 247d-e that to be is to be causally efficacious (i.e., being able to act or to be acted upon). If so, anything that is must be a cause or an effect (actually or potentially) and accordingly, cause and effect are *per se* attributes of being.

Al-Fārābī mentions cause (*al-‘illa*) and effect (*al-ma‘lūl*) among the *per se* attributes of being in *On the Aims*. Even if Aristotle himself did not think that cause and effect are *per se* attributes of being, it is possible that al-Fārābī reasoned as follows: *Met.* Δ chiefly discusses the terms signifying ontological ideas, but this book also discusses a host of causal terms, so causality should be among the *per se* attributes of being. Moreover, al-Fārābī might have justified in his mind his attribution to Aristotle the view that cause and effect are *per se* attributes of being on

the ground of taking Aristotle to be committed to the principle formulated above (namely, to be is to be causally efficacious).

This completes the review of all the chapters in *Met. Δ* except for Δ.17: in this chapter, Aristotle discusses the senses of “limit” (*peras*). Although it is not clear at first sight how *peras* fits in with all the other terms discussed in *Met. Δ*, it seems that *peras* is also discussed in *Met. Δ* because of its relation to principle (*archē*). As Aristotle puts it at the end of Δ.17 summing up his review of the senses of *peras*, “so it is clear that limit is said in as many ways as principle is said, and in even more ways; for a principle is a limit but not every limit is a principle” (1022a10-3).

Chapter 2: The one in number (*al-waḥda bi-l-‘adad*) in *KW*

As I mentioned in the introduction, of the three major differences between al-Fārābī’s discussion of unity and multiplicity in his *KW* and Aristotle’s corresponding discussion in the *Metaphysics*, this dissertation discusses two of them. This chapter explains one of these major differences, namely al-Fārābī’s treatment of the sense of unity in number (*al-waḥda bi-l-‘adad*).

As will be detailed below, unlike Aristotle, al-Fārābī is interested in explicitly distinguishing between the senses of unity that are used in one-place contexts (or monadic) and the sense of unity that are used in many-place contexts (or polyadic).³¹⁵ Let me illustrate with an example what I mean by the distinction between the use of a term in one-place and many-place contexts. Broadly speaking, a term used in one-place contexts expresses a property while a term used in many-place contexts expresses a relation. The term “red” is used in one-place contexts. The sentence “this cup is red” brings to the mind a *complete* thought. By contrast, the term “sibling” is used in many-place contexts. The term “sibling” expresses a relation, not a property. Even though “Zayd is a sibling” might be a perfectly fine sentence on some occasions, this sentence brings to the mind an *incomplete* thought. This sentence invites us to complete this thought by considering that there is another person, say ‘Amr, and Zayd and ‘Amr have the same parents, because being a sibling is a relation that holds between two (or more) people who have the same parents.³¹⁶

As I argue below, not only is al-Fārābī interested in distinguishing between the senses of unity that are used in one-place contexts and those which are used in many-place contexts, but he also articulates his idea of unity in number with the requisite features for it to perform a special function of grounding all the senses of unity used in many-place contexts. In other words, to put it roughly, two things, X and Y, are said to be one *because* something about them, Z, is one in number. For example, Zayd and ‘Amr are one in species, which is one of the senses of unity used

³¹⁵ That Aristotle was not interested in explicitly distinguishing the one-place and the many-place senses of the one is also observed by Laura M. Castelli in her *Problems and Paradigms of Unity: Aristotle’s Accounts of the One* (Sankt Augustin: Academia-Verlag, 2014), 68.

³¹⁶ The senses of unity used in many-place contexts that I discuss below express relations between two or more things, generally speaking, but I do not dwell on the question of whether a particular sense of unity *must* express a *binary* relation or whether it *can* also express a relation between more than two things. Al-Fārābī does not seem to be keen on specifying this point either. For my purpose here, the important point is whether a sense of unity is used in one-place contexts or in many-place contexts, regardless of whether it expresses a relation between two things or more than two things. Al-Fārābī usually gives examples with two things, and I follow his practice without necessarily implying that I am giving an example of a *strictly binary* relation.

in many-place contexts, and they are one in species *because* their species, the human kind, is one in number. I will also argue that al-Fārābī develops his sense of unity in number with the requisite features to perform this function of grounding all the senses of unity used in many-place contexts not directly from Aristotle’s discussion or use of the one in number in the *Metaphysics*; rather, al-Fārābī’s more direct source is Aristotle’s discussion of the same in number in *Topics* I.7.

Since al-Fārābī’s idea of unity in number as grounding all the senses of unity used in many-place contexts is apparently unprecedented in the earlier Aristotelian tradition, and given all the intricacies of al-Fārābī’s discussion of the one in number and the senses of the one used in many-place contexts, I decided to present first a synoptic account of al-Fārābī’s analysis of these senses of unity used in many-place contexts and how the one in number is meant to ground them. After I make clear the important features of al-Fārābī’s end-product, so to speak, I undertake a detailed analysis of his potential sources in Aristotle and the late antique Aristotelian tradition, specifying which ideas he used, changed or avoided in developing his account along with his theoretical concerns that guided this process.

In addition to this introduction, a short conclusion at the end, and an appendix on al-Kindī’s take on *Met.* Δ.6, this chapter proceeds in five sections. In the first section, I review al-Fārābī’s account of the senses of unity used in many-place contexts. In the second section, I spell out the features with which al-Fārābī articulates his idea of unity in number so that it can perform the function of grounding all the senses of unity used in many-place contexts. In the remaining three sections, I discuss the Aristotelian background to al-Fārābī’s idea of the one in number. In the third section, I review an account of the senses of unity which divides them into the one in number, the one in species, the one in genus, and sometimes also the one by analogy common in Aristotle and in the late antique Aristotelian tradition. Even though this account of the three or four senses of unity is in the background of al-Fārābī’s discussion of the corresponding senses of unity in *KW*, al-Fārābī’s overall account of the senses of unity in *KW* and especially his account of the one in number are quite different from this division of the senses of unity into the one in number, in species, in genus, and by analogy that we find in Aristotle and the earlier Aristotelian tradition. In the remaining two sections, I focus on passages from Aristotle that are potential candidates for being direct sources for al-Fārābī’s idea of unity in number in *KW*. In the fourth

section, I review Aristotle's discussion and employment of the one in number in the *Metaphysics* and the related ideas, and I argue that these passages could not be al-Fārābī's direct source for developing his idea of unity in number with the requisite features to ground all the senses of unity used in many-place contexts. Finally, in the last section, I show that al-Fārābī developed his idea of unity in number more directly from Aristotle's discussion of the same in number in *Topics* I.7 and I explain how al-Fārābī developed his account of the one in number with those features from Aristotle's account in *Top.* I.7.

Section 1: Senses of unity used in many-place contexts

Unlike Aristotle, al-Fārābī clearly distinguishes the one-place and the many-place senses of the one. As al-Fārābī initially presents in *KW* 1-4 = 40.5-42.10,³¹⁷ two things are said to be one in genus (*bi-l-jins*) because their genus is one (e.g., horse and donkey are one in genus because their genus, animal, is one), or two things are said to be one in species (*bi-l-naw'*) because their species is one (e.g., Zayd and 'Amr are one in species because their species, human, is one), or equivalently, two things are said to be one in the formula denoting their quiddity (*bi-l-qawl al-dāll 'alā māhiyyatihimā*), i.e., the definition,³¹⁸ because the formula which denotes their quiddity

³¹⁷ Also summarized later in *KW* 63 76.8-12 = 64.1-5, *KW* 85 = 74.16-5.4, and *KW* 91 97.8-98.1, 4-8 = 77.11-5, 78.1-4, although with small differences or omissions.

³¹⁸ Aristotle characterizes the definition (*horos*, *horismos*) often as the formula (*logos*) of the essence (*to ti ēn einai*) of the thing at issue (see, for example, *Met.* Δ.8 1017b21-22, *Met.* Z.5 1031a12, *Met.* H.1 1042a17, *Top.* I.5 101b39, *Top.* VII.3 153a15-16, and *Top.* VII.5 154a31-2; see also *APo* II.3 90b3-4, 90b30-1, 91a1, and II.10 93b29 where the definition is characterized as (the *logos*) of the *ti esti* or indicating it). Al-Fārābī also follows Aristotle in characterizing the definition as the formula of the quiddity: see, for example, at *KH* 167 167.16-7, "what the definition [*hadd*] of the species denotes is its quiddity, and each part of the formula [*al-qawl*, sc., definition] denotes a part of its quiddity;" at *KH* 216 215.3-4: "that which is denoted by the definition of the thing is its explained [*mulakhkhaṣa*] quiddity;" also see al-Fārābī's *Isagoge* commentary / paraphrase (*Kitāb Īsāghūjī ay al-Madkhal in al-Manṭiq 'inda al-Fārābī*, v.1 p.87): "[concerning] each *ma'nā* which has a name and a definition, its definition is equal to its name in denotation [*musāwin fi al-dalāla*], and both [its name and its definition] make known [*yu'arrifu*] the quiddity of the thing. However, the name makes known the *ma'nā* of the thing and its quiddity as summarized [*mujmalan*] and not as articulated and explained [*ghayr mufaṣṣal mulakhkhaṣ*], but the definition makes known its *ma'nā* and its quiddity as explained and articulated by the things by which it subsists [*qiwāmuḥu*]." The view that the name of something denotes its quiddity as summarized while its definition denotes its quiddity as explained and articulated is expressed by al-Fārābī in other places too: see, e.g., *KH* 88. In agreement with the claim that the definition is the formula which denotes the quiddity, in *KW* 91 98.4-6 = 78.1-2 Farabi asserts that "[the 'one' said of] the things whose formula denoting their quiddity is one... reduces to [*rāji' ilā*] [the 'one' said of] the things which are one in species." (In this passage, both editions agree that there is a dittography in the mss. but each edition keeps a different alternative; I translate Mahdi's version but there is no important difference in meaning between the two). This claim corroborates that the formula which denotes the quiddity is the definition because the things whose definition is the same are necessarily of the same kind.

is one. Likewise, two things are said to be one in accident (*bi-l-‘araḍ*) because their accident is one (e.g., snow and milk are one in accident because they both are white).³¹⁹ In all these cases, two (or more) things are said to be one because their predicate (*maḥmūl*) is ultimately³²⁰ one, and in particular, it is *one in number* (*KW* 4 = 42.4-10, *KW* 5 41.1-3 = 43.5-6,³²¹ *KW* 63 76.11-2 = 64.4-5, *KW* 85 93.7-9 = 75.3-4, *KW* 91 97.8-11 = 77.11-14).³²²

For ease of discussion, it is useful to distinguish the question of how al-Fārābī characterizes his idea of the one in number from the question of what are the sources for his idea of the one in number. The second question is an interesting question because “one in number [*hen kat’ arithmon* or *arithmō(i)*]” is a term already used and discussed by Aristotle and in the Aristotelian

³¹⁹ Al-Fārābī distinguishes some other cases which appear to be closely related to unity in accident. As laid out in *KW* 3 = 41.5-42.4, two things are said to be one because they are of the same species and have multiple accidents in common (e.g., two chunks of water coming from the same spring). So, this is just an intensification of the case of the one in accident. Also, two things are said to be one if they serve the same aim. Also, if X is related to something and Y is related to another thing, but their relation is of the same kind, then X and Y are said to be one. All these cases are analyzed by al-Fārābī in terms of the predication of an accident or of two accidents which are of the same kind. Compare the later summaries of these senses of unity (the one in accident and the related senses) in *KW* 63 76.9-11 = 64.2-4, *KW* 85 93.3-7 = 74.18-5.3, and *KW* 91 98.6-8 = 78.3-4 which have some small differences between themselves. I do not discuss these cases in detail because they do not offer interesting insights for the purpose of this chapter.

³²⁰ In most cases considered under unity in predicate, X and Y are said to be one because they have one and the same predicate. However, in some cases, two things are said to be one in predicate not because they have the same predicate directly, but because their predicates are of one and the same kind. Let me illustrate what I mean with an example of one of the cases mentioned in the previous footnote. In *KW* 3 38.10-5 = 41.13-6 al-Fārābī asserts that X and Y are said to be one if the relation of X to something and the relation of Y to another thing are of the same kind. Although al-Fārābī himself does not give an example of this case, the following example seems to represent, at least some of, what al-Fārābī means in this case: Zayd and my cat are one (in being tall) because Zayd is taller than ‘Amr and my cat is taller than my friend’s cat. The relation Zayd has with respect to ‘Amr and the relation my cat has with respect to my friend’s cat are of one and the same kind.

So, in most cases X and Y are said to be one in predicate because their predicate is one in number; in some other cases, X and Y are said to be one in predicate because the species of their predicates is one in number. Since these complicated cases do not present any interesting additional information for the present discussion, I will usually consider the simple cases where X and Y are said to be one because their predicate is one in number.

³²¹ I prefer Mahdi’s emendation over the smaller emendation by Martini Bonadeo and her team. More on this, see Footnote n.328 below.

³²² In the interest of space, I will not discuss the passages from Aristotle that seem to be the primary sources of al-Fārābī’s accounts of the senses of unity used in many place contexts that I review in this section and how al-Fārābī articulated his senses of unity from these passages from Aristotle (of course, apart from the sense of unity in number whose sources in Aristotle are discussed in the rest of this chapter). Instead, I will just mention such passages from Aristotle in footnotes like this one. The passages that al-Fārābī seems to use to articulate his senses of unity in predicate are Aristotle’s discussion of the one in species, in genus, and by analogy in *Met.* Δ.6 (1016b31-1017a3), Aristotle’s discussion of the one in genus earlier in *Met.* Δ.6 (1016a25-32), and his discussion of the same in genus, and in species in *Top.* I.7 (103a10-23) (which also contains the source of al-Fārābī’s articulation of some of his cases of the one in accident). It is also possible that al-Fārābī reads Aristotle’s discussion of the one said of things “whose formula stating their essence [*ho logos ho to ti ēn einai legōn*] is undivided from another [formula] which makes clear the thing” to mean what al-Fārābī means when he says that two things are one because they have the same formula denoting their quiddity (see *Met.* Δ.6 1016a32-b1).

tradition, and the connection between what is called “one in number” by Aristotle and in the Aristotelian tradition and what al-Fārābī calls “one in number” in *KW* are far from being obvious. In the present section and in Section 2, I address the first question; in the remaining three sections, I address the second question about al-Fārābī’s sources for developing his idea of unity in number.

Let me go back to my review of the senses of unity used in many-place contexts according to al-Fārābī’s analysis. The cases of the one in subject (*mawḍūʿ*) are also similar to the cases of the one in predicate discussed above.³²³ Two things are said to be one if their matter (*ʿunṣur*)³²⁴ is successively one in number (e.g., consider a crown which is made of silver, but is later melted and recast as an anklet; this crown and this anklet are one because their matter, this piece of silver, is one in number). Or two things are said to be one if their matters are one in species, and the species of their matters is one in number, be it proximate or remote matter (e.g., a wooden door and a wooden bed are one in this respect because, although their proximate matters, this piece of wood and that piece of wood, are not one and the same particular piece of wood, they are one in species, and their matters are one in species because the species of their matters, wood, is one in number; so the door and the bed are one in this respect ultimately because the species of their matters is one in number). These two cases of unity in subject have the “subject” in the sense of the matter of a form-matter composite, which often means the subject of change,³²⁵ broadly speaking. Indeed, this is one of the common meanings of “subject [*hupokeimenon*]” in the Aristotelian tradition. The other common meaning of “subject” is the subject of predication. Al-Fārābī also discusses the uses of “one in subject” according to this latter sense of “subject.”³²⁶

³²³ Initially presented in *KW* 5 = 42.10-43.6 (more on the textual issues in this paragraph, see Footnotes n.327, 328 and 388), and summarized later in *KW* 86 = 75.5-9, and *KW* 91 97.8-98.4 = 77.11-7, with small differences or omissions.

³²⁴ In *KW* 91 98.1-4 = 77.15-7, this sense of unity by virtue of having the same matter is expressed as “*al-wāḥid bi-l-ʿunṣur wa-l-mādda*” and in the following summary of this sense of unity, al-Fārābī uses “*mādda*” instead of “*ʿunṣur*.”

³²⁵ For an outline of the different senses of “matter (*hulē*)” as a technical term in Aristotle, see Footnote n.384 in Section 4 below.

³²⁶ Al-Fārābī uses “subject (*mawḍūʿ*)” both in the sense of the subject of change and also in the sense of the subject of predication, and these two senses of “subject” go back to Aristotle. This issue is discussed in greater detail in Section 4 below, but let me mention here just one passage from the *Metaphysics* which explicitly refers to these two senses of “subject.” Aristotle says at *Met. Z.13* 1038b2-6 that the subject (*hupokeimenon* – *mawḍūʿ*) is said to underlie (*hupokeitai* – *yūdaʿu*) in two ways: either as the animal underlies its properties (*pathesin*) or as the matter (*hulē*) underlies the actuality (*tē(i) entelecheia(i)*): λέγεται δ’ ὥσπερ τὸ ὑποκείμενον οὐσία εἶναι καὶ τὸ τί ἦν εἶναι καὶ τὸ ἐκ τούτων, καὶ τὸ καθόλου. περὶ μὲν οὖν τοῖν δυοῖν εἴρηται (καὶ γὰρ περὶ τοῦ τί ἦν εἶναι καὶ τοῦ ὑποκειμένου, ὅτι διχῶς ὑπόκειται, ἢ τότε τι ὄν, ὥσπερ τὸ ζῷον τοῖς πάθεσιν, ἢ ὥς ἡ ὕλη τῇ ἐντελεχείᾳ): “Just as the subject, the

So, two accidents are one because they are predicated of a subject which is one in number (e.g., white and tall are one in subject because they characterize one subject), or a genus and an accident are one because they are predicated of a subject which is one in number, or likewise a species and an accident are one (e.g., white and human are one in subject because they both are predicated of Zayd).³²⁷ Similar to the one in predicate we saw above, it is common to all cases of the one in subject that X and Y are said to be one in one of these cases of unity in subject because Z, their subject, is one in number or their subjects are one in species and their subjects are one in

essence, and what is composed of these are said to be substance, also the universal [is said to be substance]. We talked about the two (i.e., about the essence, and about the subject that it [sc. the subject] underlies in two ways, either being a this something [*tode ti*], as the animal [underlying] its properties, or as the matter [underlying] the actuality.” The Arabic translation of this passage by Uṣṭāth is found in Averroes, *Commentary on the Metaphysics*, p.959 lines 9-13: *فإنه كما أن الموضوع يقال إنه جوهر وما هو بالإنية أيضا كذلك والذي منهما والكل قد قيل في الاثنين فإنه قد قيل ما هو بالإنية: 9-13. وقيل في الموضوع إنه موضوع بنوعين إما أنه هذا الشيء كالحیوان موضوع للأنفعالات وإما مثل العنصر.*

Two brief notes on the Arabic translation. First, “*tē(i) entelecheia(i)*” at the end of the Greek text is not translated into Arabic for some reason. This omission can be due to a simple mistake by Uṣṭāth. It is also possible that his exemplar also lacked “*tē(i) entelecheia(i)*” at the end or it was badly damaged on that spot and because the overall sense of the passage is not significantly impacted without this phrase, he might have decided simply to translate the passage without the illegible phrase. I want to add in connection with this that Jaeger’s edition of the *Metaphysics* does not record any variant readings here. Second, some of Uṣṭāth’s translation choices diverge from the terminology that ultimately becomes the standard in Arabic philosophy and is also commonly used by al-Fārābī. So, while Uṣṭāth translates “*to ti ēn einai*” as “*ma huwa bi-l-inniyya*,” the corresponding term in the mature Arabic philosophical terminology is “*mā huwa [al-shay’]*,” “*māhiyya*” or sometimes “*dhāt*.” Also, Uṣṭāth undertranslates the “*tode ti*” in this passage as “*hadhā al-shay’*,” but when “*tode ti*” is used as a philosophical term as it seems to be the case in this passage, it corresponds in the later Arabic philosophical terminology to “*mushār ilayhi*.”

It might appear in this passage that Aristotle reserves the first sense of “subject” to the individual substance (as he refers only to “*tode ti*” in this passage) with respect to the accidents of this individual substance (as he refers only to the “*pathē*” in this passage). However, we know that in other places, the subject of predication can be a particular or a universal, and what is predicated of it can be substantial (e.g., human predicated of Socrates) or accidental (e.g., white predicated of Socrates). More on these two senses of the subject as the subject of change and as the subject of predication, see Section 4 below.

³²⁷ The way these senses of the one in subject where “subject” is taken in the sense of the subject of predication are presented in *KW* is rather complicated. I mentioned three cases above: 1. two accidents, 2. an accident and a genus, and 3. an accident and a species. In both editions, in *KW* 5 40.9-14 = 43.1-4, only two cases are mentioned. In the mss., we have “accident and genus” followed by the example of “the white” and “the tall” said of the same subject (40. 9-12 = 43.1-2). Then we have again “accident and genus” and this time the example is “the white” and “the human” said of Zayd (or ‘Amr) (40.12-4 = 43.2-4). Clearly something went wrong here. First, “accident and genus” is repeated in both cases, and this must be a mistake. Based on the example in the first case, both editions correct the “accident and genus” at line 10 = 1 into “two accidents (‘*araḍayn*),” but this does not solve the whole problem because the example in the second case, “the white” and “the human” should more normally be an example of an accident and a *species*, not a *genus* (given that human is the lowest kind). All these three cases that I mention above are explicitly listed in the summary of the senses of the one in subject in *KW* 86 93.11-4 = 75.6-8. Also, al-Fārābī explains in *KW* 7 = 43.14-44.4 that the subject itself is said to be one in number in these cases of the one in subject, and there he mentions all the three cases I mentioned above, and “the human” and “the white” said of Zayd is given there as an example with an accident and a *species*, not a *genus*. So, it is likely that the text of *KW* 5 as extant in our mss. is corrupt, and that the full account should ideally present the three cases I mentioned above, as it is done in *KW* 86 (although without examples). So, it is possible that a long phrase, maybe a full line, fell out due to homoioteleuton and to restore it, in light of *KW* 7 and *KW* 86, we can add *مثل الحيوان وذو رجلين فهما واحد إذا كانا يحملان* right before *مثل الأبيض والإنسان* at line 13 = 4. If we want to be more conservative in emending, we can emend the “genus (*jins*)” at line 12 = 3 into “species (*naw*)”.

species because the species of their subjects is one in number ($KW 5\ 39.15-40.14 = 42.10-5$ ³²⁸, $KW 86 = 75.5-9$, $KW 91\ 97.8-98.4 = 77.11-7$).³²⁹ So both in the cases of unity in predicate as well as in the cases of unity in subject, two things are said to be one in some respect because some relevant thing about these two things that is dictated by that respect is one in number.

The senses of the one al-Fārābī considers under the one in subject and the one in predicate are obviously used in many-place contexts. There are other senses of the one which appear to be used in one-place contexts, but a closer analysis shows that they are to be cashed out in terms of some senses of the one used in many-place contexts. To begin with, consider the case where something is said to be one on account of its continuity.³³⁰ Al-Fārābī distinguishes several ways

³²⁸ As indicated above, in $KW 2$, and $3 = 40.8-42.4$, al-Fārābī distinguishes the senses of the one in predicate; in $KW 4 = 42.4-10$ he makes general remarks about all the senses of the one in predicate; in $KW 5\ 39.15-40.14 = 42.10-5$, he distinguishes the senses of the one in subject, and before moving on to his discussion of the one in number starting in $KW 6 = 43.7-14$, he makes this general claim at the end of $KW 5$ (i.e., $41.1-3=43.5-6$), as Mahdi prints it: وبالجملة فإن كل اثنين إنما يقال فيهما وهما اثنان إنهما واحد إما إذا كان محمولهما واحدا بالعدد >وإما إذا كان موضوعهما واحدا بالعدد<. The clause at the end about “one in subject” put in brackets is not in any of the mss. and it is added by Mahdi. The edition by Martini Bonadeo and her team does not add this clause and they emend the underlined إما into ما. What we have in the mss. can be taken as إما or أما. أما does not make sense here. إما by itself is not good either because by itself it would be awkwardly left without a coordinate وإما. This seems to be one of the reason that Mahdi adds that second إما clause at the end. On the other hand, Martini Bonadeo and her team emend the إما-أما into ما and they translate ما إذا as “when [quando];” I know that ما إذا can mean “when” and ما إذا “whether,” introducing a yes/no question in indirect speech but I am not aware of the use of ما إذا to mean “when” as Martini Bonadeo and her team seem to take it. In any case, even if ما إذا can simply mean “when,” I think there is another and stronger contextual reason to prefer Mahdi’s addition. The content of the preceding discussion builds up to a summary of the one in predicate and the one in subject before moving on to the next topic of the one in number, and such a summary is signaled by al-Fārābī here (observe the “*bi-l-jumla*” at the beginning); if this summary contained a claim about the one in predicate which was discussed before the discussion of the one in subject (i.e., $KW 2-4$) but did not mention anything about the one in subject which was presented *right before* this passage (i.e., $KW 5$), it would be significantly disorienting on the reader’s part. So the development of the discourse demands a clause like the one added by Mahdi and the omission of this clause in the mss. can be explained as a simple mistake due to homoioteleuton.

³²⁹ The passages that al-Fārābī seems to use to articulate his senses of unity in subject include Aristotle’s discussion of the one *per accidens* in *Met.* $\Delta.6$ (1015b17-34) and his discussion of the one said of things whose “subject is not distinguished in kind [*to hupokeimenon tō(i) eidei einai adiaphoron*]” in *Met.* $\Delta.6$ (1016a17-24). It also seems that al-Fārābī’s accounts of both the senses of unity in subject and the senses of unity in number are informed by Aristotle’s discussion of the one in number in the *Metaphysics* and the same in number in the *Topics*. In the last three sections below, I discuss these passages in Aristotle where he talks about the one in number and the same in number, and how these passages are or are not likely to have served as primary sources for al-Fārābī’s account of the senses of unity in number. In these sections, I do not discuss in detail how unity in number and unity in subject can be easily conflated and some of these passages in Aristotle can be interpreted to spell out some senses of unity in number as well as some senses of unity in subject, and how al-Fārābī appears to use some of these passages to spell out his senses of unity in subject too. Although I do not discuss these issues in detail, I touch upon them in passing in Sections 4 and 5 below.

³³⁰ The senses of the one *qua* continuous are initially presented in $KW 9-12 = 45.11-47.15$. Later summaries or articulations can be found in $KW 63\ 76.14-77.1 = 64.8-10$, $KW 87 = 75.10-4$, and $KW 93\ 99.5-9 = 79.1-4$; see also $KW 65 = 66.1-11$ which contains a discussion of the senses of multiplicity opposed to each of the senses of unity *qua* continuous but is also helpful for understanding the different senses of unity *qua* continuous distinguished in the next footnote.

in which a continuous thing is said to be one on account of its continuity but according to the basic sense, the claim that something is a continuous (*muttaṣil*) thing means that the parts of this thing terminate at (*yantahī ilā*) an extremity (*nihāya*) which is shared by these parts and is one in number. In other words, to consider a simple case, the line segment AB is one *qua* a continuous thing because its parts AC and CB terminate at an extremity which is shared by both and is one in number, namely the point C.³³¹

Moreover, X is said to be one *qua* a totality (*jumla*) either because it is composed (*mu'talif*) of many bodies which are not continuous but in contact (*mutamāss*) with each other, i.e., a totality of contiguous bodies, and what holds its parts together and unifies them is a bond (*ribāṭ*) which

³³¹ For this basic sense of the one *qua* continuous, see, in particular, *KW* 9 = 45.11-4, and *KW* 87 94.3-5 = 75.12-3. There are two further ways in which a continuous thing is said to be one, and these ways are more like specifications of the sense presented above which I called “basic.” These two further ways pertain to the specific ways in which a straight line is a continuous thing (in addition to the condition above, the opposition between its extremities is also a single opposition), and a circle is a continuous thing (in addition to the condition above, there is no opposition between its extremities because its extremities are one in number, i.e., any point we pick on a circle as its starting point will also turn out to be its end point if we trace the whole circle) (*KW* 10, 11 = 45.15-46.15 and the beginning of *KW* 12 (47.1-5 = 47.1-4); see also *KW* 63 76.14-77.1 = 64.8-10).

Finally, al-Fārābī presents another way in which a continuous thing is said to be one on account of its continuity in *KW* 12 47.5-48.5 = 47.4-15 (also briefly mentioned in *KW* 87 94.5-6 = 75.13-4): a continuous thing is said to be continuous not because it is *actually* divided into two parts whose common extremity is one in number, but rather it is not *actually* divided. In this sense, e.g., a straight line is said to be continuous because it is not actually quantitatively divided. Insofar as continuity is understood exclusively in this way as the lack of actual quantitative division, it would not have any reference to “one in number” as we have in the case of the one *qua* continuous described above. In that case, the sense of the one *qua* continuous described above would also not be entirely *basic*, because this last sense of the continuous as lacking actual quantitative division would not have any reference to it. Indeed, al-Fārābī seems to be aware of the conceptual independence between continuity understood as lack of actual quantitative division and continuity understood in terms of its parts’ having a common extremity which is one in number, when he talks about the different senses of the many that are opposed to the different senses of the one said of continuous things on account of their continuity in *KW* 65 = 66.1-11. Of course, the problem with the view that we have two accounts of continuity and that they are completely conceptually independent is that according to this view “continuous” would be a purely equivocal term, like “bank” said of the edge of a river and “bank” said of a financial institution. Although this is not put explicitly, a solution might be hinted at in *KW* 12 (47.13-48.1 = 47.10-2) that continuity does not *simply* mean lack of actual quantitative division, but it means lack of actual quantitative division *plus* the possibility that when the continuous thing is imagined to be divided into two parts, its parts would have a common extremity which is one in number. If this is correct, we would be justified in calling the sense of continuity described above the *basic* sense of continuity.

is one in number³³² (e.g., by welding (*liḥām*) or gluing (*lizāq*) etc.)³³³ or it has non-corporeal parts which are linked (*murtabiṭ*) to each other through something which is one in number (e.g., a syllogism is one in this respect because its extreme terms are linked to each other through the middle term which is one in number). So, whether we talk about a totality which has corporeal parts (e.g., a ship) or a totality which has non-corporeal parts (e.g., a syllogism), the entire thing is said to be one because its parts are said to be one by virtue of being linked to each other, and they are said to be one ultimately because that through which they are linked is one in number.³³⁴

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In all the senses of unity reviewed so far, the senses of unity under the one in subject, the one in predicate, the one *qua* continuous, or the one *qua* a totality, two (or more) things are said to be one in some respect and this is ultimately because the relevant thing about these two things is one in number; the relevant thing is specified by the sense of the “one” used in this case. For example, if we talk about X and Y’s being *one in genus*, the relevant thing about X and Y is *their genus*; if we talk about Z’s being *one qua continuous* because its parts X and Y are continuous, the relevant thing is *the extremity that is common to both parts*.

³³² It is stated in *KW* 13 = 48.1-7 that a corporeal totality is unified through a bond but it is not explicitly stated in that paragraph that this bond is one in number. That said, in the following paragraph (*KW* 14 = 48.8-15) which deals with the closely associated case of non-corporeal totalities, it is explicitly said that the link through which a non-corporeal totality is one is itself one in number. Also, in the later review of unity *qua* a totality in *KW* 88, al-Fārābī explicitly mentions at the beginning of the paragraph (94.7-9 = 76.1-3), talking specifically about the corporeal totalities, that the bond through which the totality is unified is itself one in number (it is mentioned in this way also in *KW* 63 77.1-2 = 64.11-2). Al-Fārābī seems to be qualifying this claim later in *KW* 88 by adding that of the multiple things which are said to be one in this sense, it is also possible that they are connected by bonds which are one in species or genus, but even in that case, unity *qua* a totality is ultimately grounded in unity in number, namely in the unity in number of the species or the genus of such bonds (95.7-11 = 76.10-4).

³³³ More on the senses of being in contact in Aristotle and in al-Fārābī, see Chapter 3 Section 1.a.

³³⁴ Both the corporeal and the non-corporeal cases are initially discussed in *KW* 13, and 14 = 48.1-15; they are summarized or further articulated later in *KW* 63 77.1-5 = 64.11-4, *KW* 88 = 76.1-18, and *KW* 93 99.9-100.8 = 79.5-13.

Al-Fārābī adds in *KW* 15 = 49.1-4 that if a corporeal or a non-corporeal totality is also organized such that it constitutes a whole (*kull*) and a complete (*tāmm*) thing, i.e., that it is not lacking in any way in performing its function, it is said to be one to a higher degree. This supervening sense of unity by virtue of being a whole is also treated together with the unity of a corporeal or a non-corporeal totality later in *KW* 88 95.4-7 = 76.8-10 (Mahdi’s *kullī* at 5 = 8 is to be preferred to the *jaliyy* in Martini Bonadeo and her team on account of the close association of *kull* and *tāmm* as we see in the parallel passage *KW* 15) and *KW* 93 100.3-4 = 79.9-10.

³³⁵ Al-Fārābī’s accounts of the senses of unity *qua* continuous and unity *qua* a totality start from Aristotle’s discussion of the one said of a continuous thing (*suneches*), including the one said of a whole (*holon*), in *Met.* Δ.6 (1015b36-1016a17, 1016b11-17), and in *Met.* Iota 1 (1052a19-29, 1052a34-b1). Also, Aristotle’s characterization of the continuous in *Phys.* V.3 (repeated in VI.1) and his characterization of the continuous quantity in *Cat.* 6 (especially his claim that the discrete quantities do not have a common boundary (*horos*) at which their parts are joined (*sunaptei*), while the continuous quantities do have) are relevant for al-Fārābī’s account of continuity in *KW*.

As we see so far, for al-Fārābī, all the senses of unity used in many-place contexts are grounded in unity in number. Al-Fārābī also indicates that *only* the senses of unity used in many-place contexts are grounded in unity in number. After briefly reviewing the senses of unity he classified under unity in predicate, unity in subject, unity *qua* continuous, and unity *qua* a totality that I discussed above, al-Fārābī says,

T1 *KW* 63 77.5-6 = 64.15-6

فهذه كلها هي واحد لأجل أنها إذن تُنسب إلى الواحد بالعدد وهو سبب كونها واحدا.

... all these are one on account of the fact that they are then related to the one in number, which is the cause [*sabab*] for their being one.

After a short intervening comment on the sense of multiplicity which is the opposite of unity in number, al-Fārābī goes on to talk about the senses of unity by virtue of circumscription (*inḥiyāz*) which are used in one-place contexts. Briefly put, something is said to be one according to these senses of unity either because it is circumscribed by its extremity (*nihāya*) or by its place (*makān*) or by its quiddity (*māhiyya*). About these senses of unity, al-Fārābī says,

T2 *KW* 64 77.10-3 = 65.1-3

والمنحاز بنهاية ما والمنحاز بمكان ما والمنحاز بماهية ما فإن هذه الثلاثة متشابهة ولم يُقَلْ ولا في شيء منها إنها واحد لأجل أن لها نسبة إلى الواحد بالعدد هو³³⁶ السبب في أن صارت هذه كلها واحدا.

[As for] that which is circumscribed by a certain extremity, that which is circumscribed by a certain place, and that which is circumscribed by a certain quiddity, these three are similar, and indeed none of them was said to be one on account of the fact that they have a relation to the one in number which would be the cause [*sabab*] for all of them to become one.

Al-Fārābī also distinguishes some other senses of unity used in one-place contexts besides the senses of unity by virtue of circumscription that T2 talks about.³³⁷ So the claim above that the

³³⁶ Martini Bonadeo and her team: <هو>. For a similar exegetical use of the pronoun, see, e.g., *KH* 16 29.1, 2.

³³⁷ According to the order of their presentation in Part 1 of *KW*, something is said to be one because it is not divided into more specific subjects (*KW* 18 = 50.7-13), or not quantitatively divided (*KW* 20 = 51.4-8), or quantitatively divided but assumed not to be so for some reason (*KW* 21 = 51.9-17), or not divided into accidents (i.e., does not have multiple accidents) (*KW* 22 = 52.1-3), or not divided along with the inflections (*taṣārīf*) of the expression

senses of unity by virtue of circumscription are not grounded in unity in number is, strictly speaking, not enough to infer that *none* of the senses of unity used in one-place contexts is grounded in unity in number because the claim above does not comprise the remaining senses of unity used in one-place contexts. That said, in his discussions of the remaining senses of unity used in one-place contexts, al-Fārābī does not suggest *at all* that any of these senses of unity is grounded in unity in number, even though he has ample occasions to do so if that was his position.³³⁸

Section 2: Features of al-Fārābī's account of unity in number

It is safe to infer that for al-Fārābī *all* the senses of unity used in many-place contexts and *only* they are grounded in unity in number. In what follows, I will try to show that the question of why al-Fārābī thinks so is to be answered most adequately by first addressing the 'all' question, and then the 'only' question. For the sake of conceptual clarity, I want to separate the question of how al-Fārābī characterizes unity in number and which function he assigns to this sense of unity from the question of how al-Fārābī developed this sense of unity from Aristotelian sources, as I briefly mentioned above. In this section, I spell out the characteristics of al-Fārābī's idea of unity in number. In doing so, I also explain why al-Fārābī thinks that *all* and *only* the senses of unity used in many-place contexts are grounded in unity in number. In the remaining three sections, I discuss views on unity in number and the related senses of unity in Aristotle and the late antique Aristotelian tradition and I spell out how al-Fārābī develops his idea of unity in number directly from Aristotle's account of (the one and) the same in number in *Topics* I.7: al-Fārābī develops his idea of unity in number from the *Top.* I.7 account of (the one and) the same in number with a

denoting it (*KW* 23 = 52.4-8), or its quiddity is not divided (*KW* 24 = 52.9-10), or it does not have a co-participant (*qasīm*) in a characteristic (*ṣifa*) that it has (*KW* 25 = 52.11-53.6).

³³⁸ Probably the reason why al-Fārābī explicitly says that the senses of unity by virtue of circumscription are not grounded in unity in number but he does not explicitly say this about the other senses of unity used in one-place contexts mentioned in the previous footnote is down to the order in al-Fārābī's narrative: the senses of unity by virtue of circumscription come right after the discussion of the senses of unity used in many-place contexts while the other senses of unity used in one-place contexts mentioned in the previous footnote come much later, namely in *KW* 70 = 68.13-69.4, and there al-Fārābī's purpose is not to review the senses of unity as it is his purpose in *KW* 63 and 64 = 64.1-65.15 partially quoted as T1 and T2 above; rather, his purpose in and around *KW* 70 is to discuss the senses of the many arising from some sense of the one. The same order (namely, the senses of unity used in many-place contexts, then the senses of unity by virtue of circumscription, and finally the other senses of unity used in one-place contexts mentioned in the previous footnote) is also found in Part 1 of *KW*.

view to articulate a sense of unity that has the features specified below which are required to ground the senses of unity used in many-place contexts.

As we saw above, it is common to all the senses of the one used in many-place contexts that when we say that X and Y are one, we mean that they are ‘joined’ together in some respect, loosely speaking. The thing which does this ‘joining’, say Z,³³⁹ grounds the unity of X and Y. In turn, Z must be one in some sense because if it refers simply to a *mere* collection of distinct things, it would be difficult to see how Z could ‘join’ X and Y because on this assumption, Z refers to a mere collection of things which themselves are not ‘joined’ together. So the discussion of the senses of unity used in many-place contexts would be incomplete without the clarification of the sense in which the thing which does the ‘joining’ in each case is one. Could Z be one in some sense of unity used in many-place contexts reviewed so far? The fact that Z is a variable with the form of a singular term should not make us jump to the conclusion that Z is not one in one of these senses of unity used in many-place contexts. It is conceivable that Z refers to a collection of distinct things. For example, if Z refers to whatever is in this room, and if there are two cats in this room, we can correctly apply “one in species” to the things which are in this room, i.e., Z. Alternatively, even if Z refers to one thing, the claim that Z is one in species can still be a meaningful claim, but it would be an incomplete claim, with the implication that there is something else which has the same species as Z. So, considerations of mere linguistic form do not seem to rule out Z’s being one in one of these senses of unity used in many-place contexts. In fact, al-Fārābī seems to be providing a positive argument to defend that Z is not one in a sense of unity used in many-place contexts like the cases discussed so far. The following passage comes right after al-Fārābī’s discussion of the senses of unity in predicate one by one, and this passage presents his general observations about them:

T3 KW 4 = 42.4-10

³³⁹ Z does not have to be understood as a substance; it could be the link itself. For example, it seems reasonable to identify such a Z which does the ‘joining’ to be the pegging, gluing etc. in the case of the one *qua* a corporeal totality briefly mentioned above.

وكل اثنين قيل فيهما إلهما واحد لأجل أن شيئاً واحداً يُحمل عليهما فإنما³⁴⁰ قيل فيهما واحد لأجل أن محمولهما واحد، فظاهر أن معنى الواحد الذي قيل عليهما غير معنى الواحد الذي قيل³⁴¹ على محمولهما³⁴²، فإن إنما يصح هذا المعنى عليهما لأجل الواحد الذي يقال على محمولهما، <ومحمولهما>³⁴³ يقال فيه إنه واحد لا لأجل شيء حُمِلَ عليه لكن بذاته وبنفسه، فمحمولهما يقال فيه واحد بالعدد. فإن إنما صار كل اثنين واحداً بالمحمول الذي حُمِلَ عليهما وإذا كان المحمول واحداً بالعدد.

[1] [As for] any two things which were said to be one [above] on account of the fact that one thing is predicated of them, they were said to be one only on account of the fact that their predicate is one, so [2] it is clear that the sense of the ‘one’ which was said of them both is different from the sense of the ‘one’ which was said of their predicate. Thus, [3] this sense correctly applies to [*yaṣiḥḥu ‘alā*] them only on account of the ‘one’ which is said of their predicate, [while their predicate] is said to be one not on account of something that was predicated of it, but *per se* [*bi-dhātihī*] and by itself [*bi-naḥsihi*]; so their predicate is said to be one in number. [4] Thus, any two things become one only by virtue of the predicate which was predicated of them even though the predicate is one in number.

³⁴⁰ Mahdi and the mss. have *فإن ما* but I follow the emendation by Martini Bonadeo and her team. The mss. reading can also be taken to make sense, but with this emendation the passage reads more smoothly.

³⁴¹ Mahdi prints *يقال* but it is *قيل* in all three mss. which is correctly reproduced in the edition by Martini Bonadeo and her team.

³⁴² The mss. have *مجموعهما*, and both editions print this, but in the apparatus, Mahdi suggests that this should perhaps be corrected into *محمولهما*. The corruption of *محمولهما* into *مجموعهما* can be explained without much difficulty: since *jīm* and *ḥā* have the same *rasm*, they could look the same in a hand sloppy with diacritics. The corruption of *lām* into *‘ayn* is harder to explain, but if the vertical stroke of the *lām* was short and thick, it could be mistaken for an *‘ayn* in the initial position.

In any case, it is clear in the following passage that the one said of the two things, which is in the sense of unity in predicate, is different from the one said of the predicate itself, which is in the sense of unity in number. So, it would not make sense for al-Fārābī to say that the one said of these two things, i.e., the one in predicate, is different from the one said of them two collectively (*‘alā majmū‘ihimā*).

Another, and less likely, option, still maintaining that the one said of the two things is different from the one said of their predicate, is to preserve *majmū‘ihimā* of the mss. but change the mss. reading of *‘alayhimā* to *‘alayhā*, in which case the whole clause would read *معنى الواحد الذي قيل عليها غير معنى الواحد الذي قيل على مجموعهما*, with the meaning that the sense of the one said of them [i.e., of the predicates, each one on its own] is other than the sense of the one said of both of them collectively [i.e., of the two things which are said to be one in predicate together].” So, in this less likely alternative, the first *ma‘nā al-wāḥid* is unity in number, while the second *ma‘nā al-wāḥid* is unity in predicate.

³⁴³ This phrase is not in the mss. and added by Mahdi. Martini Bonadeo and her team follow the mss. and do not insert this phrase. The context makes it clear that the subject of the following *يقال فيه* should be *محمولهما*; as I can see, this sense can be obtained most straightforwardly either by adding *الذي* or *ومحمولهما* before this *يقال فيه*. I follow Mahdi’s emendation because it makes the sense clear and this inserted word could fall out due to near repetition, but the missing word could as well be *الذي* or *و*.

I numbered the clauses in this passage for ease of reference. In (1), al-Fārābī states that two things are said to be one in predicate because their predicate is one. In (2), he asserts that the sense of the one said of these two things, i.e., unity in predicate, is different from the sense in which their predicate is said to be one, i.e., unity in number. In (3), he elaborates on this claim, although in a condensed fashion. It seems that al-Fārābī's argument, in part, rests on a concern to avoid an infinite regress or circularity in explanation.³⁴⁴ Assume that X and Y are one in predicate because their predicate, Z, is one. If Z is also one in predicate either because Z refers to a collection of things which are one in predicate or it is implied that Z is one in predicate with something else, then we would need another thing, W, which is their predicate and is one. Saying that Z is one in predicate does not complete our explanation of the sense in which X and Y are one in predicate; it merely defers this explanation to the explanation of the sense in which W is one. If W is also one in predicate, we would need yet another thing to explain the unity in predicate of W, and this would go on forever if in each step we say that the new thing is also one in predicate or this would go in a circle. It seems that for this reason, al-Fārābī insists that the original predicate Z is not one in predicate but it is one “*per se* [*bi-dhātihi*] and by itself [*bi-nafsihi*],” and more specifically al-Fārābī identifies the sense in which the predicate is one as one in number. Finally, in (4) al-Fārābī summarizes the whole passage.

The argument in (3) addresses only the infinite regress or the circular explanation of the one in predicate, but I believe that the underlying reasoning in this argument applies to every sense of the one used in many-place contexts reviewed so far with a reasonable additional assumption that I tried to motivate above: if X and Y are said to be one together, this is because they are ‘joined’ by some *one* thing, Z. If Z is said to be one in one of the senses of unity used in many-place contexts reviewed so far, for the same reason, the unity of Z would be grounded in the unity of something else which is one, say W, which ‘joins’ or ‘unifies’ Z. To avoid the infinite regress or the circular explanation of the unity of something depending on the unity of something else and so on, at some point, we must posit something which is one “*per se* [*bi-dhātihi*] and by itself [*bi-nafsihi*],” i.e., it is one and its unity does not depend on the unity of something else. As we saw in the cases of the senses of unity used in many-place contexts reviewed above, two or more things

³⁴⁴ This was first brought to my attention by Stephen Menn.

are said to be one, and this must be ultimately because something about them is “one *per se* and by itself.” Al-Fārābī identifies this sense of unity as unity in number.

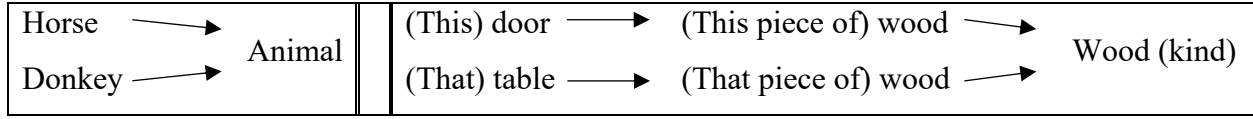


Figure 1

As depicted in Figure 1, the senses of unity used in many-place contexts reviewed above have mostly the simpler conceptual structure as in the example on the left-hand side: e.g., horse and donkey are one in genus because their genus, animal, is one in number. In the remaining few cases, there is an intermediate step of many-place unity: e.g., this door and that table are one in matter because their matters, this piece of wood constituting this door and that numerically distinct piece of wood constituting that table, are one in species because their species, (the) wood (kind), is one in number. The more complex cases do not offer any interesting additional information for our current consideration. So, we can focus on the simpler cases.

The unity of animal on which the unity in genus of horse and donkey depends must remain unaffected, in some relevant sense, by the fact that animal is related to (here, more specifically, predicated of) horse as well as by the fact that animal is related to (here, predicated of) donkey. In other words, animal remains one and the same thing as it is related to horse and to donkey.

The relevant sense of the unity of animal should minimally convey this idea, and this idea seems to be equally generalizable to every sense of unity used in many-place contexts reviewed above. At the very least, this seems to be what al-Fārābī tries to get at in his general characterization of unity in number, that is, the sense of unity that applies to Z when X and Y are said to be one in some sense of unity used in many-place contexts reviewed so far because Z is one. For now, let’s bracket the fact that al-Fārābī calls this sense of unity “the one in number.” I want to focus now on just how al-Fārābī characterizes this sense of unity:

T4 KW 8 42.8-15 = 44.4-11

وبالجملة فإن كل شيء يُنسب إلى شيئين كيف كانت النسبة فإن المنسوب إلى أحدهما والمنسوب إلى الآخر واحد بعينه بالعدد. وأيضاً ما لم يفقد ماهيته في النسبتين ولم تتغير³⁴⁵ بتغير النسبتين، فإن المنسوب بإحدى النسبتين والمنسوب

³⁴⁵ Both editions print يتغير. The MS. A has يتغير while MS. B does not have diacritics except for the dot of the *ghayn* and MS. C has the first letter without diacritics. So, MSS. B and C can clearly be taken to support the reading I

بالأخرى واحد بالعدد. فلذلك صار الجنس المحمول على نوعين واحدا بالعدد إذا كان المحمول على أحد النوعين والمحمول على الآخر واحدا بعينه، والنوعان هما³⁴⁶ واحد بالجنس لأجل أن الجنس المحمول عليهما واحد بالعدد.

In general, [as for] anything that is related [*yunsabu*] to two things, whatever kind of relation it may be, that which is related to one of them and that which is related to the other is one and the same in number. Also, [as for] what is not deprived of [*yafqid*] its quiddity in two relations and [its quiddity] does not change with the change of these two relations, that which is related by one of the two relations and that which is related by the other is one in number. For this reason, the genus which is predicated of two species becomes one in number if that which is predicated of one of the two species and that which is predicated of the other [species] is one and the same, while [these] two species are one in genus on account of the fact that the genus predicated of them is one in number.

As we saw in T3, e.g., two species, horse and donkey are one in genus because their genus, animal, is one, and in particular, it is one “*per se* and by itself,” with the implication, minimally, that it does not owe its unity in this context to the unity of something else. So it is clear that when we apply “one in number” to something, its unity is not grounded in the unity of some further thing. In other words, however we cash out what al-Fārābī means by “one in number,” it must satisfy, at least, this requirement that unity in number does not depend on the unity of something else, unlike the senses of unity used in many-place contexts reviewed so far.

Although this is clear, it may appear less clear at first sight as to whether al-Fārābī uses “one in number” in one-place or many-place contexts systematically. On the one hand, al-Fārābī says that “their predicate is said to be one in number” in T3, which seems to suggest that unity in number is used in one-place contexts, applied to a single thing, i.e., to their shared predicate. In other words, it appears that their shared predicate is predicated of two things but the one in

prefer: تتغير. The difference between the reading of the both editions, “*yataghayyar*,” and my reading of “*tataghayyar*” is that the subject is the thing according to their reading, but the subject is its quiddity (*māhiyyatuhu*) according to mine. The relevant cases can involve the change of the thing under consideration, though not an essential change. For example, when we say that the anklet made of bronze is melted and recast as a crown, the anklet and the crown are one in matter because their matter, this chunk of bronze, is one in number. It seems natural to say that this chunk of bronze *did* change as it came to assume the shape of the crown from having possessed the shape of the anklet; however, insofar as we can meaningfully talk about the same bronze, it must be the case that it still has the same quiddity.

³⁴⁶ Not in Mahdi but is in all three mss. and is correctly restored in the edition by Martini Bonadeo and her team.

number here is predicated of a single thing, i.e., this predicate. Indeed, “one” said of the genus right above in T4 seems to be used in a one-place context too, as al-Fārābī says that “the genus which is predicated of two species is one in number...,” again, apparently applying “one in number” to a single thing, i.e., to this genus. This seems to be the case generally: as we can see in the passages paraphrased above concerning the various senses of unity used in many-place contexts, in every sense of the one used in many-place contexts reviewed above, many things are said to be one in some respect because something about them specified by this respect is said to be one in number, and it appears that in all these cases, “one in number” is used in one-place contexts. As I tried to explain above, al-Fārābī seems to argue that in all the senses of unity used in many-place contexts reviewed so far, the unity of the many things which are said to be one depends on the unity of something else, but this thing which ‘joins’ or ‘unifies’ them cannot be said to be one in a sense similar to these senses of unity used in many-place contexts. For example, in the context where horse and donkey are said to be one in genus because their genus, animal, is one, we want animal to be one “*per se* and by itself,” and it appeared that this “one” said of the animal in this context is used as a one-place predicate.

On the other hand, it also seems that in T4 quoted right above, unity in number is spelled out as a many-place predicate in its logical form: in the same example where horse and donkey are said to be one in genus because animal is one in number, the “one in number” said of the animal is spelled out in terms of the fact that what is predicated of horse and what is predicated of donkey are one and the same in number.

More generally, in the case of X and Y’s being said to be one because Z is one in number, al-Fārābī stresses that that which is related (*yunsabu*) to X and that which is related to Y are one and the same in number. But of course, in the case of, e.g., horse and donkey’s being one in genus, what is predicated of donkey and what is predicated of horse are not distinct things, but in both cases, it is their genus, the animal kind. So the claim “Z is one in number” is spelled out in terms of the fact that Z remains one and the same thing in number when it is considered under the aspect of its relation (*nisba*) to X as well as under the aspect of its relation to Y.³⁴⁷ In short, “one

³⁴⁷ As I discuss briefly below, al-Fārābī seems to cash out Z’s remaining one and the same thing in number as it relates to X and Y in terms of there being a single quiddity, and not distinct quiddities that are picked out by the expressions “what is related to X” and “what is related to Y.” In the interest of place, I cannot pursue this line of thought further, but as I outline it below, it seems to me that al-Fārābī ultimately thinks that it is a brute fact that

in number” said of Z is explained in terms of unity and sameness in number which is used as a many-place predicate concerning its logical form, but unlike all the other senses of unity used in many-place contexts reviewed above, “one and the same in number” cannot be said of distinct things,³⁴⁸ but it must be said only of a single thing considered in its relation to two (or more) things. So it seems that according to al-Fārābī’s final analysis, “one (and the same) in number” is used as a many-place predicate, strictly speaking, but this is a borderline case of the use of a predicate in many-place contexts and can also in a way be considered as being used in one-place contexts because we necessarily talk about a single thing which is said to be one in number (though considered under two aspects).³⁴⁹

I want to repeat again that al-Fārābī correctly characterizes this sense of the one (and the same) in number as having the logical form of a many-place predicate. One of the questions al-Fārābī is interested in in the second part of *KW* is whether the subject of a sense of unity must be a multitude. This is a mark of the senses of unity used in many-place contexts because by definition, “one” in any of these senses must be said of ‘many’ things (actually many distinct things or the same thing being referred to several times). Al-Fārābī points out that the subjects of all the senses of unity used in many-place contexts reviewed above (the one in predicate, the one

quiddities are individuated, and the senses of unity, including unity in number, are ultimately grounded in this fact that quiddities are primitively individuated.

³⁴⁸ I speak of “distinct things” intentionally vaguely because I mean this claim to be quite comprehensive. The “thing” I am talking of here can refer to a substance or an accident; it can refer to a particular or a universal. In other words, I want the “thing” here to function as a universal variable that ranges over all the parts and aspects of reality that are treated in Aristotle’s *Categories*, broadly speaking.

³⁴⁹ As mentioned above in Footnote n.315, Castelli points out that Aristotle does not distinguish the one-place and the many-place uses of “one” (i.e., between the monadic and the polyadic uses of “one,” according to Castelli’s preferred terminology). Yet, she adds that “[e]ven if the distinction is not drawn by Aristotle himself, the difference between the two usages is relevant for appreciating the diverse range of problems of unity raised in Aristotle’s writings” (Castelli, *Problems and Paradigms of Unity*, 68). Then, she goes on to sketch out a way for us to distinguish the one-place and the many-place uses of “one” in Aristotle and their subcases (Castelli, *Problems and Paradigms of Unity*, 68-70). It is not my concern here to organize all the senses of unity Aristotle discusses or employs according to the question of whether a sense of unity is used in one-place or many-place contexts. I just want to point out that Castelli distinguishes two main kinds of the use of “one” in many-place contexts; the claim “A and B are one” can be understood in two ways: “(2i) A is the same as B” and “(2ii) A and B put together yield something one, of which they are, in some sense, parts” (Castelli, *Problems and Paradigms of Unity*, 69). Although Castelli does not fully spell out this distinction, it appears to me that the distinction Castelli makes bears some similarities to the distinction I make in my interpretation of al-Fārābī between all the senses of unity used in many-place contexts reviewed above which are grounded by unity in number on the one hand, and unity in number, on the other. As I detail below, al-Fārābī’s idea of unity in number is very closely connected to the idea of sameness and although “one (and the same) in number” is also used in many-place contexts strictly speaking, nonetheless, unlike the previous cases of unity used in many-place contexts, unity in number is *necessarily* used in reference to a single thing, be it a particular or a universal, a substance or an accident.

in subject, the one *qua* continuous, and the one *qua* a totality) must be many (*KW* 50 = 61.16-20, *KW* 52-54 = 62.7-22). Al-Fārābī adds that the subject of the one in number which also includes the general sense of the one (and the same) in number as characterized in T4 is also many.³⁵⁰ As al-Fārābī puts it,

T5 *KW* 51 = 62.1-6

وأما الواحد بالعدد فإنه منسوب إما إلى اسمين أو إلى اسم وقول أو إلى محمولين. فإما أن يكون هو كثيرا لأجل كثرة نسبته إلى أشياء كثيرة من أسماء ومحمولات، وإما أن تكون الأشياء الكثيرة³⁵¹ غير مفارقة له. فيكون هذا الواحد إما كثيرا ضرورة وإما مقرونا بكثير ضرورة، والواحد إنما يصدق عليه لأجل أنه كثير أو أنه مقرون بكثير ضرورة، وإلا لم يصدق عليه الواحد بالعدد.

The one in number is related either to two names, or to a name and a formula, or to two predicates. It is either many on account of the multiplicity of its relation to several things among names or predicates, or [such] several things are inseparable [*ghayr mufāriqa*] from it. So this thing which is one is either necessarily many or necessarily associated [*maqrūn*] with many [things], and ‘one’ applies to it only on account of the fact that it is many or that it is necessarily associated with many [things]; otherwise, ‘one in number’ does not apply to it.

I will discuss in detail the more extensive accounts of the cases of the one in number below but for now, I want to bring the reader’s attention that in this passage al-Fārābī treats “one (and the same) in number” as a many-place predicate in its logical form; and this is not surprising because as Aristotle emphasizes in his discussion of the same (*tauto*) in *Metaphysics* Δ,

T6 *Met.* Δ.9 1018a7-9

³⁵⁰ It is worth noting that even though sometimes al-Fārābī’s language, as in T5, might make it seem that the one in number is said of, e.g., two names, it is clear from al-Fārābī’s direct accounts of the one in number in *KW* 6, 7, 8 = 43.7-45.11 (part of which is quoted as T4 above and as T13 below), and *KW* 89 = 77.1-8 and *KW* 92 = 78.5-12 that a single thing is said to be one in number in consideration of this single thing’s relation to two things, which can also be, e.g., two names when this single thing is named by two names. As further explained below, we apply “one (and the same) in number” to a single thing but when we do that, we consider it as two things.

³⁵¹ Martini Bonadeo and her team: كثيرة.

... φανερόν ὅτι ἡ ταυτότης ἐνότης τίς ἐστὶν ἢ πλειόνων τοῦ εἶναι ἢ ὅταν χρῆται ὡς πλείοσιν, οἷον ὅταν λέγῃ αὐτὸ αὐτῷ ταῦτόν· ὡς δυσὶ γὰρ χρῆται αὐτῷ.³⁵²

... it is clear that sameness is a kind of unity [or, unity of a sort]³⁵³ [a] either of the being of many things or [b] when someone treats [something] as many things, e.g., when he says that it is the same as itself, for [in this case] he treats it as two things.

So (a) we either say of distinct things that they are the same or (b) we say of one thing that it is the same although insofar as it is considered as two things. As I will detail below, in *Top.* I.7, Aristotle distinguishes three ways in which the term “the same” is used: the same in genus (e.g., a human and a horse), the same in species (a human and another human), and the same in number (e.g., the one and the same thing with two names like “cloak” and “mantle”), and this last sense is the direct source of the sense of “one and the same in number” in al-Fārābī that is under consideration. It stands to reason that “the same” said of distinct things in T6 is in the sense of sameness in genus or sameness in species, but “the same” said of one thing considered as two things is in the sense of sameness in number.

So, to repeat, in every sense of the one used in many-place contexts, what is said to be one and the same in number is either one and the same predicate and not distinct predicates, or one and the same subject and not distinct subject, or one and the same extremity and not distinct extremities, or one and the same link and not distinct links, although in each case this predicate, or subject, or extremity, or link is said to be one and the same in number because it is considered under two different aspects.

I explained so far al-Fārābī’s characterization of unity in number which grounds the senses of unity used in many-place contexts. Let me address now, as I announced at the beginning of this section, why this sense of unity grounds *only* the senses of unity used in many-place contexts; the answer to this question is rather straightforward now. The relevant sense of unity in number applies to something *just in case* this thing is considered under the aspect of its relation to two

³⁵² The passage from *Met.* Δ which corresponds to chapters 9 and 10 in the modern editions along with Averroes’ commentary on it is missing in Averroes’ *Commentary on the Metaphysics* as it reached us.

³⁵³ The translation of “*henotēs tis*” depends on how we take this “*tis*”: if it is taken as indicating a kind, we should translate the phrase as “a kind of unity,” but if it is taken as a *tis alienans*, we should translate the phrase as “unity of a sort,” i.e., not exactly unity but something like it. For my purpose, what matters is the close association between unity and sameness.

things. In other words, if Z is not related to X and Y in an appropriate sort of relation and if Z is not considered insofar as it is related to X and Y, we cannot apply “one in number” in al-Fārābī’s sense to Z. So al-Fārābī’s general sense of unity in number is the complementing counterpart of the senses of unity used in many-place contexts.

It may appear that al-Fārābī defines unity in number *merely* as a complementing counterpart of the senses of unity used in many-place contexts that it is supposed to ground. In other words, it may appear that al-Fārābī’s accounts of the senses of unity used in many-place contexts and unity in number are *viciously* circular. But if we want to say that unity in number *grounds* or *explains* in some strong sense these other senses of unity, unity in number should not be understood *entirely* in terms of these other senses of unity it is supposed to ground or explain because the grounding relation or the relation between the explanandum and the explanans in some strong sense of explanation is not a symmetrical relation. Indeed, there is an inevitable circularity in al-Fārābī’s characterization of unity in number: e.g., horse and donkey are one in genus *because* their genus, animal, is one in number. So unity in genus is explained in terms of unity in number. However, in turn, we explain animal’s unity in number by citing the fact that what is predicated of horse as its genus and what is predicated of donkey as its genus are not distinct things but the same thing, sc., animal. This circularity is not a *vicious* circularity, however, because this is not all there is to al-Fārābī’s characterization of unity in number. In T4, apparently by way of articulating what we mean when we say that, e.g., animal remains the same as it is predicated of horse as well as of donkey, al-Fārābī adds that “[as for] what is not deprived of [*yafqid*] its quiddity in two relations and [its quiddity] does not change with the change of these two relations, that which is related by one of the two relations and that which is related by the other of the two relations is one in number.” In other words, the one in number is ultimately spelled out in terms of the unity and sameness of the quiddity. When we say that Z is one in number considered in its relation to X and Y, what we mean is that “what is related to X” in this context and “what is related to Y” in this context do not refer to distinct quiddities but the same quiddity (or they refer to the same thing with the same quiddity).

This takes us farther from the scope of this chapter, but let me present here in outline what I take to be al-Fārābī’s basic idea of individuation in relation to his idea of being that I will elaborate on in the Conclusion Chapter, namely that quiddities are primitively individuated for al-Fārābī and

things are ultimately individuated by virtue of their quiddities. That the real quiddities are *individuated* means that these quiddities can be enumerated without duplication, and that the real quiddities are *primitively* individuated means that there is no further fact that grounds the fact that they can be enumerated without duplication. Accordingly, the variable “X” refers to one thing because what it refers to does not comprehend distinct quiddities but a single quiddity. Since the quiddities are primitively individuated, this means that inspecting the quiddities, we can tell whether two different expressions or ideas refer to genuinely distinct things or not. Based on this idea, if we consider X under its relation to two things, we say that X is one in number. If it is considered by itself, its unity just expresses its relation to its primitively individuated quiddity, and this idea is articulated by al-Fārābī in terms of his sense of unity by virtue of circumscription (*inḥiyāz*) by a quiddity. When we consider something to be one in some other sense of unity, we understand it to be undivided in some relevant respect, and in doing so, we do not introduce any new feature to reality beyond the fact that things have their quiddities and that there are predication (or whatever is the real counterpart of predication) relations among them.

Section 3: The one in number, in species, in genus (and by analogy) in Aristotle and the Aristotelian tradition

I explained the sense of unity which is said of, e.g., animal in the context where horse and donkey are said to be one in genus because animal is one, but I deferred until now the question of why al-Fārābī calls this sense of unity “one in number” or “one and the same in number” (both locutions are used by al-Fārābī).³⁵⁴ This is not just a matter of which designation should be used for the relevant sense of unity.

“One in number [*hen kat’ arithmon* or *arithmō(i)*]” is used as a technical term in Aristotle and the late antique Aristotelian tradition. One of the commonly used lists of the senses of unity (and the same) in Aristotle can be found at *Met.* Δ.6 1016b31-1017a3 and in *Top.* I.7. In the *Met.* Δ.6 passage, Aristotle distinguishes four senses of unity: unity in number (*kat’ arithmon* / *arithmō(i)*), in species (*kat’ eidos* / *eidei*), in genus (*kata genos* / *genei*), and by analogy (*kat’ analogian* /

³⁵⁴ “One in number” is used too often to record here. For “one and the same in number [*bi- ‘aynihi wāḥid* or *wāḥid bi- ‘aynihi bi-l- ‘adad* or *fī-l- ‘adad*],” see *KW* 7 42.2, 4-5, 6-7 = 43.15, 44.2, 4, *KW* 8 42.10 = 44.5-6; also “one and the same” is used in other places in the sense of “one and the same in number:” see *KW* 2 37.15 = 41.5, *KW* 6 41.8 = 43.9-10, *KW* 8 42.14 = 44.10, *KW* 91 98.8 = 78.4, and *KW* 92 99.3-4 = 78.12.

analogia(i)). In *Top.* I.7, he distinguishes three general senses of (the one and) the same: (the one and) the same in genus, in species, and in number. This list, especially the shorter with unity (and sameness) in number, in species, and in genus is found in other places in Aristotle's corpus, and this list comes to be perceived as the most general division of the senses of unity, at least in some works, in the late antique Aristotelian tradition. In this section, I present an overview of the use of this list of the three or four senses of unity (the one in number, in species, in genus, and maybe also in analogy) as one of the general divisions of the senses of unity (perhaps even the most prominent general division of the senses of unity) in Aristotle as well as in the late antique Aristotelian tradition. As I already noted above in Chapter 1 Section 1, this is the division of the senses of unity al-Fārābī presents as the main division of the senses of unity in *On the Aims*. I remind the reader at the end of this section that this is not the main division of the senses of unity in *KW*: al-Fārābī discusses several senses of unity beyond the senses of unity in this list and as will be explained in Chapter 3, arguably the ontologically most significant sense of unity al-Fārābī discusses in *KW*, sc. unity by virtue of circumscription (*inḥiyāz*) by a quiddity is outside of this list. Moreover, I will also remind the reader that even though these three (or four) senses of unity in this list are treated on the same level, al-Fārābī develops his account of unity in number to ground the other senses of unity in this list (the one in species, in genus, and in analogy (understood as a special case of unity in accident)) as well as other senses of unity beyond these (the senses of unity in subject, unity *qua* continuous, and unity *qua* a totality). In the remaining two sections I present closer analysis of the passages in Aristotle that deserve to be examined as al-Fārābī's sources for his articulation of his idea of unity in number. So, in Section 4, I discuss what Aristotle means by the one in number in the *Met.* Δ.6 passage (as well as in other places in the *Metaphysics*) and argue that these were not al-Fārābī's direct sources for articulating his idea of the one in number in *KW*. In Section 5, I argue that al-Fārābī's direct source was Aristotle's account of (the one and) the same in number in *Top.* I.7 and I explain how al-Fārābī used that account to develop his idea of unity in number with all the features that, as described above, are needed to ground all the senses of unity used in many-place contexts.

Aristotle distinguishes several senses of unity in *Met.* Δ.6. Finally, he presents a list of four senses of unity at 1016b31-1017a3: the one in number, in species, in genus, and by analogy.³⁵⁵

³⁵⁵ The only thing that comes after this in this chapter is Aristotle's brief remarks about multiplicity (1017a3-6).

This list clearly forms one new ‘unit’ of the senses of unity (observe the “*eti de*” at the beginning of this passage) and it is not clear how this new list of the senses of unity is supposed to relate to the senses of unity distinguished earlier in the chapter. It is also not entirely clear what Aristotle means by these senses of unity; in particular, his characterization of unity in number in this passage is obscure. I will discuss in abundant detail what Aristotle might mean by his characterization of unity in number in this passage in the next section, but let me note here based on this passage and other passages in Aristotle some of which are briefly reviewed below that it seems very likely that by the one in species, and the one in genus Aristotle means nothing surprising. Broadly speaking, two things are said to be one in species just in case they have the same species; two things are said to be one in genus just in case they have the same genus. Also, it seems that two things are said to be one by analogy if they have the same kind of relation or if they are related to the same thing, i.e., either that X and Y are one by analogy if X is to Z as Y is to W or that X and Y are one by analogy because they are related to the same thing (“one by analogy” seems to be particularly apt for talking about such X and Y if they are in different categories). (The one and) the same in species and in genus in *Top.* I.7 are also similarly explained. *Top.* I.7 is officially on the senses of the same (*tauton*) as Aristotle states at the beginning of the chapter (103a6-7).³⁵⁶ However, also in this chapter he closely associates the same with the one or uses them interchangeably (see 103a9-10, 23-4, 31). Besides, Aristotle often uses the phrase “one and the same [*hen kai tauton*, or in the other genders],”³⁵⁷ and this suggests that at least some senses of unity and sameness merge together and describe a single aspect of reality. Also, as we saw in T6, Aristotle says at *Met.* Δ.9 1018a7 that “it is clear that sameness is a kind of unity [or, unity of a sort] [*hē tautotēs henotēs tis*].” So (the relevant senses of) unity and sameness are very closely associated, if not identical. Broadly speaking, Aristotle says in *Top.* I.7 that things are said to be (one and) the same either in genus, or in species, or in number. So we have the senses of unity and sameness in number, in species, and in genus distinguished both at *Met.* Δ.6 1016b31-7a3 and *Top.* I.7. Besides these, we also have unity by analogy in the *Met.* Δ.6 passage.

³⁵⁶ These three ways in which things are said to be the same is also employed in the discussion of the *topoi* about the same in *Top.* VII.1.

³⁵⁷ The examples are too many; let me mention just a few to illustrate this point: *Top.* V.2 130b3, VI.4 142a8; *SE* 5 167a23, 6 168b31-2, 169a1, 13 173b3, 24 179a26-7.

Just like unity in number in *Met.* Δ.6, unity in number in *Top.* I.7 is also complicated and discussed extensively in Section 5. That said, in other places in the *Metaphysics* discussed in Section 4 and in other works by Aristotle, some of which are briefly reviewed below, “one in number” and “particular” are presented as coextensive terms, if not as practically meaning the same thing.

The list of these three (or four) senses of unity (the one in number, species, and genus, and sometimes also the one by analogy) is used in other places by Aristotle or the classification of these senses of unity informs his other related considerations (i.e., the classification of some related ideas in terms of number, species, genus, and analogy). Aristotle discusses the ways in which motion (*kinēsis*) is said to be one in *Phys.* V.4: motion is said to be one either in genus, or in species, or it is said to be “one unqualifiedly if it is one in *ousia* and in number,” (227b21-2); the following discussion makes it clear that he uses “one in *ousia*” and “one in number” interchangeably. Also later at *Phys.* VII.1 242a66-b42, apparently referring back to the *Phys.* V.4 classification of the unity of motion, Aristotle says that motion is said to be one and the same either in genus, or in species, or in number. Moreover, in *Met.* Δ.6, Aristotle employs the idea of the same or the opposite of the same, other/distinct (*heteron, allo*),³⁵⁸ by analogy, or in genus, or in species, or in number: he argues at 1071a24-29 that the causes and elements (*aitia kai stoicheia*) of the substances that are not the same in genus are the same only by analogy, while the causes and elements of the substances that are the same in species are not distinct in species, but, as implied, they are distinct as particulars while being the same in species. Although Aristotle does not mention “distinct in number” explicitly in this passage, as I detail in the following section, Aristotle often calls a particular one and the same in number; so distinct particulars would be distinct in number. Also, Aristotle characterizes different things (*diaphora*) as distinct things which are also the same in some way: “things are said to be different if they are distinct while being some same thing [*to auto ti onta*], only not in number but in species or in genus or by analogy” (*Met.* Δ.9 1018a12-13).³⁵⁹ Finally, one can also mention Aristotle’s remark at *PA* I.5 645b20-8 about the functions (*praxeis*) that are common to all animals, or to a genus of animals, or to a species of animals: the functions that are common to all animals are common by

³⁵⁸ I say more about the distinct/other (*heteron, allo*) below. For now, let me quote just one informative claim from *Met.* Δ.9 1018a11: “and in general, *to heteron* is said in opposite ways [*antikeimenōs*] to the same.”

³⁵⁹ Compare this characterization of the different with its characterization at *Met.* I.3 1054b22-31.

analogy (*kat' analogian*), the functions that are common to a genus of animals are common in genus (*kata genos*), and the ones which are common to a species of animals are common in species (*kat' eidos*).

In late antique Greek commentaries, the list of the senses of unity in number, in species, in genus, and sometimes also by analogy come to be used as one of the general divisions of the senses of unity, if not *the* most general division of them. Even in commentaries on passages from Aristotle which do not mention this list of three (or four) senses of unity or do not directly discuss senses of unity, when the commentators feel the need to present a brief account of the senses of unity, they usually present this list of three (or four) senses of unity. For example, commenting on Aristotle's claim at *Cat.* 2 1b6-7 that "unqualifiedly, things which are individuals and are one in number are not said of anything," Ammonius launches into a brief review of the senses of the one. Of the ways in which the one is said, he mentions the one in genus, the one in species, and the one in number (30.11-17). Likewise, commenting on the same passage from the *Categories*, Philoponus says that "the one is said in three ways; also, generally speaking, sameness [*tautotēs*] and otherness [*heterotēs*] are [said in three ways too]." Then, he lists with examples the one in genus, in species, and in number as well as the other in genus, in species, and in number (37.17-38.5).

Another passage in Aristotle that prompts the commentators to talk about the ways in which the one is said is *Physics* I.2. Starting at 185a20, Aristotle develops his arguments against the strong monist claim that everything is one. He first criticizes this claim appealing to his view that being is said in many ways, and then appealing to his view that the one is said in many ways. Aristotle explicitly talks about three senses of unity: "the continuous is said to be one, or the undivided [*to adiaireton*], or the things whose *logos* of the essence [i.e., their definition] is one and the same, like liquor and drink"³⁶⁰ (185b7-9). However, the commentators take this passage along with the surrounding argument as an opportunity to present a more general division of the ways in which the one is said, and the three ways that Aristotle explicitly mentions are subsumed under that general division. If we are permitted to overlook the differences in some details, we can see that

³⁶⁰ The examples in Greek are *methu* and *oinos*, both are supposed to mean the same thing, wine, but since we do not have two distinct words in English meaning wine, I translated these words, following other translators, as "liquor" and "drink." Things signified by such words (i.e. different words with the same *logos* or meaning), insofar as they are signified by such words, are called *poluōnuma* by the commentators. More on this, see Footnote n.406 in Section 5 below.

practically all the major late antique commentators whose views reached us (sc. Philoponus' and Simplicius' commentaries, Themistius' paraphrase, and Porphyry's and Alexander's views on this issue as preserved in Simplicius' commentary) agree on the following division of the ways in which the one is said: things are said to be one either nominally (*onomati*) or really (*pragmati*). For example, when we say that things in the different categories are one, we mean that they are one nominally although they are many really. Although, as far as I see, the commentators do not put it in these terms, the unity of the things in the different categories is likely to be unity by analogy. The commentators further divide the one really; if things are said to be one really, they are one either in genus, or in species, or in number. Finally, all but Porphyry agree that the three ways in which the one is said that Aristotle explicitly mentions at 185b7-9 are to be subsumed under the one in number. As far as I can see, Simplicius does not credit Porphyry with putting the three ways in which the one is said that Aristotle mentions at 185b7-9 under the one in number.³⁶¹

In short, the commentaries on *Cat.* 2 1b6-7 and *Physics* I.2 present unity in number, in species, in genus, and perhaps also unity by analogy as the general senses of unity, even though there is no mention of these senses of unity in the passages from Aristotle that these commentaries are on. This fact suggests that even though Aristotle does not say anything explicit in *Met.* Δ.6 about the generality of unity in number, in species, in genus, (and by analogy) to the other senses of unity, or that he does not explicitly present his discussion of (the one and) the same in genus, in species, and in number in *Top.* I.7 as the discussion of the general senses of unity, this list of the

³⁶¹ Themistius: 4.24-5.13. Philoponus: 33.11-26; what the other commentators call "one in number" is called "one particularly [*tō(i) merikō(i)*]" by Philoponus in this passage; he says at 35.28-36.2 that what is one in this sense is the individual (*atomon*), and he calls it "the one as [said of] particulars [*to kath' hekasta hen*]" at 45.18. Simplicius (including Alexander's and Porphyry's views preserved in quotation or paraphrase): 72.6-74.18, 80.20-81.10; in particular, for Alexander see: 73.4-15.

For Porphyry's view agreeing with others except for subsuming Aristotle's three senses of unity at 185b7-9 (sc. the one *qua* continuous, the one *qua* undivided, and the one said of things whose definition is one and the same) under the one in number, see 74.5-11. Commenting on a longer passage from the *Physics* including the passage under consideration at 185b7-9, Simplicius expresses Porphyry's disagreement with Aristotle in mentioning the one *qua* continuous, the one *qua* undivided, and the one said of things whose definition is one and the same as the ways in which the one is said; instead of these three ways, drawing on the views Aristotle formulates elsewhere Porphyry proposes that the one is said in as many ways as being which is divided along with the categories (as quoted by Simplicius at 80.23-27; for the argument in Aristotle that there are as many kinds of unity as there are of being, see *Met.* Γ.2 1003b22-34, and for the relevant sense of being divided into the categories, see Δ.7 1017a22-7; for a discussion of Aristotle's argument for the equivalence between being and unity, see Chapter 3 Section 3 below).

senses of unity in number, in species, and in genus had assumed prominence as the general division of the ways in which the one is said for the commentators under consideration.³⁶²

The primacy accorded to the unity in number, in species, in genus, (and sometimes also by analogy) as the general senses of unity over the other senses of unity distinguished by Aristotle in *Met.* Δ.6 can also be observed in Arabic philosophical works before al-Fārābī. For example, in the fourth chapter (*fann*) of the extant first part (*juz* ') of his *On First Philosophy* (*Fī al-Falsafa al-Ūlā*),³⁶³ al-Kindī presents his account of *Met.* Δ.6, which is in part a summary, in part a paraphrase, and in part a creative interpretation; in this account, he seems to try to subsume almost all the other senses of unity *per se* distinguished in *Met.* Δ.6 under unity in number, in species, in genus, and by analogy.³⁶⁴ Also, in al-Kindī's polemic against the Christian belief in the Trinity, which is preserved as lemmata in Yahyā ibn 'Adī's response to him defending the belief in the Trinity, one of al-Kindī's arguments targets the claim that "three is one and one is three" which al-Kindī attributes to Christians.³⁶⁵ Al-Kindī suggests that to evaluate this claim we should distinguish the senses of unity:

T7 Al-Kindī quoted in *Defence of the Trinity Against al-Kindī*, p.11 lines 3-10

³⁶² There are also other passages from ancient philosophers influenced by Aristotle which mention only the one in number, in species, and in genus when they talk about the ways in which things are said to be one. For example, in searching for the primary things (*ta prōta*) and after suggesting that the mathematical do not seem to be good candidates, Theophrastus says in his *Metaphysics* "if there is some other substance which is prior and more powerful (*kreittōn*), we must try to state whether this [substance] is a [substance] which is one in number or in species or in genus" (4b6-8) (compare this with the 9th aporia in *Met.* B: B.4 999b24-1000a4) (See p.170 lines 7-8 for the medieval Arabic translation edited by Dimitri Gutas in Dimitri Gutas, *Theophrastus: On First Principles (Known as His Metaphysics)* (Leiden: Brill, 2010). Also, Galen states in his *Therapeutic Method* II that "then as it was stated correctly by the ancient philosophers that some things exist [*huparchein*] as one and the same [*tauton te kai hen*] in number, others in species, and others in genus" (*Claudii Galeni Opera Omnia*, ed. Karl Gottlob Kühn (Leipzig: Knobloch, 1821), v.10 p.143 lines 12-4). It is possible to produce other passages in ancient and early medieval Greek philosophical texts that were influenced by Aristotle, including the Aristotle commentaries, which present the ways in which the same or the other or the different are said in terms of what is so in number, in species, and in genus, but the passages I presented should suffice for the point I am making that the classification of the ways in which the one is said as the one in number, in species, and in genus had become one of the general divisions (or even the most general division) of the ways in which the one is said in ancient Aristotelian tradition.

³⁶³ In al-Kindī, *Oeuvres Philosophiques et Scientifiques d'al-Kindī, Volume 2: Métaphysique et Cosmologie*, ed. Roshdi Rashed and Jean Jolivet, vol. 2, 2 vols. (Leiden: Brill, 1998).

³⁶⁴ More on this, see Appendix: *Met.* Δ.6 in al-Kindī's *On First Philosophy*.

³⁶⁵ Full title of Yahyā's work: *Yahyā ibn 'Adī's Exposition of the Error of Abū Yūsuf Ya'qūb ibn Ishāq al-Kindī in his Treatise on the Refutation of the Christians* (*Tabyīn Yahyā ibn 'Adī Ghalaṭ Abī Yūsuf Ya'qūb ibn Ishāq al-Kindī fī Maqālatihī fī al-Radd 'alā al-Naṣārā*). I use the Arabic edition of this text in Yahyā Ibn 'Adī, "Un Traité de Yahyā Ben 'Adī: Défense du Dogme de la Trinité Contre les Objections d'al-Kindī," ed. and trans. Augustin Périer, *Revue de l'Orient Chrétien* 22 (1921 1920): 3–21. Also, for a study and an English translation of this work, see Peter Adamson, "Yahyā Ibn 'Adī Against Al-Kindī on the Trinity," *Journal of Eastern Christian Studies* 72, no. 3–4 (2020): 241–71.

أما قولهم إن ثلاثة واحد وواحد ثلاثة فهذا ظاهر الخطأ وذلك أن ما نقول إنه هو واحد إنما نقول واحدا بثلاثة وجوه كما قيل في كتاب طويبقا وهو الخامس إما أن يقال هو واحد بالعدد كما يقال للواحد هو واحد وإما أن يقال هو واحد بالنوع كما يقال خالد وزيد واحد بما عمّهما من نوعهما الذي هو إنسان وإما أن يقال هو واحد بالجنس كما يقال الحمار والإنسان واحد بما عمّهما من جنسهما الذي هو الحي

As for their claim that three is one and one is three, this is clearly wrong, for whenever we say that [something] is one, we mean that it is one only in one of three ways just as it is said in the *Topics*, which is the fifth [book in the Organon]: either that it is said to be one in number, just as it is said for one [*al-wāḥid*, sc., the principle of number] that it is one, or that it is said to be one in species, just as Khālīd and Zayd are one by virtue of their species which is common to them both, i.e., human, or that it is said to be one in genus, just as the donkey and the human are said to be one by virtue of their genus which is common to them both, i.e., animal [*al-ḥayy*]³⁶⁶.

Then al-Kindī goes on to argue that the thesis that “three is one and one is three” is untenable according to any of the three senses of the one. Al-Kindī seems to assume that the one in number or the numerical one (*al-wāḥid bi-l-‘adad*) means the unit, i.e., that out of which numbers are composed (e.g., when we say the number five has five *ones* in it). This is not the correct understanding of what Aristotle means by the one in number in *Met.* Δ.6 or (the one and) the same in number in *Top.* I.7; nonetheless, this does not need to concern us here. Also, Yaḥyā’s response to al-Kindī is not important for our current purpose.³⁶⁷ What matters to our current purpose is the fact that when al-Kindī needs an account of the senses of unity in a discussion

³⁶⁶ “*Ḥayy*,” instead of the more common “*ḥayawān*,” is used in the sense of animal in other places by al-Kindī as well: *Fī Kammiyyat Kutub Aristūṭālīs wa Mā Yuḥtāju ilayhi fī Taḥṣīl al-Falsafa* (*On the Quantity of Aristotle’s Books and What is Needed for the Attainment of Philosophy*) at 365.8-9 in al-Kindī, *Rasā’il al-Kindī al-Falsafīyya* (*Al-Kindī’s Philosophical Treatises*), ed. Muḥammad ‘Abd al-Hādī Abū Rīda (Cairo: Dār al-Fikr al-‘Arabī, 1950), also in al-Kindī’s *On First Philosophy* at 25.15-6.

³⁶⁷ Briefly put, Yaḥyā provides two counter-arguments. First, he argues that al-Kindī’s account of the senses of unity is not comprehensive; presenting additional senses and subsenses of unity, which betray the influence of the account of the senses of unity in the Greek commentaries on *Phys.* I.2 reviewed above, and using this more extensive account of the senses of unity, Yaḥyā articulates his positive view on the Trinity. Both this more extensive account of the senses of unity and Yaḥyā’s positive view on the Trinity closely follow the relevant considerations in his *On (Divine) Unity* (*Fī al-Tawḥīd*) in *Maqālāt Yaḥyā Ibn ‘Adī* (*Treatises of Yaḥyā Ibn ‘Adī*), ed. Saḥbān Khalīfāt (Amman: Al-Jāmi‘a al-Urduniyya, 1988), 375-406. For a recent revised edition of the Arabic text and an accompanying English translation, see Giovanni Mandolino, *Yaḥyā Ibn ‘Adī: Treatise on Divine Unity According to the Doctrine of the Christians: Arabic Text, English Translation and Commentary* (Leiden: Brill, 2024), 167-231. (I would like to thank Robert Wisnovsky for alerting me to this new edition and English translation of this work). Secondly, Yaḥyā turns the table on al-Kindī, and presses him to answer in which of the three senses of unity he distinguishes he would say that God is one when he professes so as a Muslim.

whose main purpose is not to discuss the senses of unity, he employs the senses of unity in number, in species, and in genus, and he identifies Aristotle's *Topics* (presumably, *Top.* I.7) as the source of these three senses of unity, even though *Top.* I.7 is primarily and explicitly about the senses of sameness, not of unity. This fact suggests that al-Kindī pursues the practice in the late antique Aristotle commentaries of taking the senses of unity in number, in species, and in genus as the general division of the senses of unity.

The senses of unity in number, in species, in genus, and by analogy occupy an important place in the understanding of the overall project of Aristotle's *Metaphysics* according to al-Fārābī's *On the Aims of the Metaphysics*. As I explained in Chapter 1 and can be seen most clearly in T5 in that chapter, in this short but interesting treatise, al-Fārābī argues that the science of metaphysics studies what is common to all beings, i.e., being and unity and their opposites, non-existence and multiplicity, and then their kinds (or more precisely, species-analogues = *al-ashyā' allatī taqūmu minhā maqam al-anwā'*) and their *per se* attributes (*lawāḥiq*). What concerns us presently is what al-Fārābī says about the kinds of unity in this passage (T5): after saying that the kinds of being (*al-mawjūd*) are the ten categories, al-Fārābī adds that the kinds of the one are “the one *qua* individual [*bi-l-shakhs*], the one in species, the one in genus, and the one by analogy [*bi-l-munāsaba*], and the parts [*aqsām*] of each one of these” (36.12-4). As I mentioned above and will detail below, Aristotle often applies “one in number” to particulars and to them alone. So, al-Fārābī's unity *qua* individual is most likely to be unity in number. Also, al-Fārābī does not specify here what the *aqsām* of these senses of unity are, but it is possible that he has in mind the further division of the one in number as in the *Physics* I.2 commentaries I talked about above. In any case, in this account of the *skopos* of the science of metaphysics, al-Fārābī mentions unity in number, in species, in genus, and by analogy as the most general senses of unity.

Clearly, in al-Fārābī's mature ontological works dealing with the senses of unity and the related issues, in *KW* and *KH*, this picture of the most general division of the senses of unity into the one in number, in species, in genus, and by analogy is not maintained. First, it will become abundantly clear in Chapter 3 that in *KH* and *KW* we observe al-Fārābī's understanding of the important ontological issue about the relation between being and unity as presented by Aristotle primarily in *Met.* Γ.2 and Iota 2, and in al-Fārābī's account, the sense of unity which corresponds to the relevant sense of being is unity by virtue of circumscription by a quiddity (*inḥiyāz bi-*

māhiyya) (explained in *KW*) which corresponds to being by virtue of circumscription by a quiddity (explained in *KH*). This important sense of unity, and many others discussed in *KW*, are not among the one in number, in species, in genus, and by analogy; and as briefly mentioned in the previous sections, these other senses of unity cannot be subsumed under the one in number, in species, in genus, or by analogy either because the latter four are among the senses of unity used in many-place contexts while unity by virtue of circumscription and several other senses of unity discussed in *KW* are used in one-place contexts. In other words, as explained in the previous sections, al-Fārābī makes it clear that these two groups of the senses of unity have different conceptual structures. Second, as should already be clear but will also be explained in further detail in the following two sections, al-Fārābī's account of unity in number is quite different from how it is understood in Aristotle and in the Aristotelian tradition as reviewed in this section; in particular, in *KW*, unity in number is not on a par with unity in species, in genus, and by analogy as it is in Aristotle and in the Aristotelian tradition as reviewed so far; rather, in *KW*, unity in number grounds unity in species, in genus, by analogy, and the other senses of unity in predicate, and more generally, all the senses of unity that are used in many-place contexts. So al-Fārābī's mentioning of unity in number, in species, in genus, and by analogy as the most general senses of unity and his presentation of them on an equal footing in his *On the Aims* seems to reflect an earlier Aristotelian tradition which is not maintained in al-Fārābī's works in ontology presenting his considered views on these subjects. In al-Fārābī's own execution of his understanding of the ontology part of metaphysics dealing with the senses of unity (and multiplicity) in *KW*, these four senses of unity are no longer the most general senses of unity in the sense of subsuming all the other senses of unity; also, in *KW* the one in number is not on an equal footing with the one in species, in genus, and by analogy as we have in the *On the Aims* account.³⁶⁸

³⁶⁸ As I touched upon in Footnote n.24 towards the beginning of Chapter 1, *KW*, *KH*, *MF*, and *SM* (and maybe also *On the Intellect*) seem to be from al-Fārābī's later period. The discrepancy between the account of the general senses of the one in *On the Aims* and the discussion of the senses of the one in *KW* can be attributed to three factors (probably the correct answer would have some combination of these three factors). First, it might be due to the fact that *On the Aims* is an earlier work and the more al-Fārābī worked on the senses of unity and the related ontological problems, the farther he moved from the simpler picture of the general senses of unity (sc., the one in number, in species, in genus, and by analogy) commonly used in the prior Aristotelian tradition. Second, it might be because *On the Aims* was written for a broader audience (beginners in philosophy or scholars working in the neighboring disciplines who wanted to have an idea about what Aristotle's *Metaphysics* is about) and for this reason al-Fārābī presented the one in number, species, genus and by analogy as the general senses of unity because people who had some basic familiarity with philosophy were likely to learn these as the general division of the sense of the one as

In the next section, I argue that al-Fārābī's direct source for his account of the one in number is not to be found in Aristotle's discussion of the one in number in the *Metaphysics*. In Section 5, I explain that al-Fārābī's direct source was Aristotle's account of the one and the same in number in *Topics* I.7; I also explain in this section that although al-Fārābī starts from the *Top.* I.7 account of the one and the same in number, he develops his idea of the one in number to a higher level of generality beyond Aristotle's account of the one and the same in number in *Top.* I.7 so that al-Fārābī's unity in number grounds all the senses of unity used in many-place contexts. In contrast with Aristotle's account of the senses of unity in *Met.* Δ.6 as a whole, and in contrast with the common account of the three (or four) senses of unity in the Aristotelian tradition as outlined in this section, al-Fārābī does not simply list different senses of unity in *KW*; instead, he seems to be interested in bringing higher conceptual order into his discussion of the senses of unity in *KW*. Realizing that several senses of unity are used in many-place contexts and that they all share a certain conceptual structure, as explained in the previous sections, and articulating the most suitable sense of unity (sc. the one in number) in a way that it can be used to underpin this shared conceptual structure are among manifestations of al-Fārābī's interest in bringing higher conceptual order into his discussion of the senses of unity in *KW*.

Section 4: Not al-Fārābī's direct source: the one in number in the *Metaphysics*

In the focal passages in the *Metaphysics* where Aristotle gives an account of the different senses of unity, namely in Δ.6 and Iota 1, there is only one passage in Δ.6 where Aristotle explicitly addresses what "one in number" means. As outlined in the previous section, after having discussed several senses of unity before in *Met.* Δ.6, Aristotle apparently starts to present another list of the senses of unity at 1016b31 (observe the "*eti de*" at the beginning of the following passage):

T8 *Met.* Δ.6 1016b31-1017a3

this division was commonly used in the prior Aristotelian tradition. Finally, the discrepancy between *KW* and *On the Aims* might be due to the fact that *On the Aims* more closely depends on some earlier Greek accounts which followed the common division of the senses of unity into the one in number, species, genus, and by analogy, while *KW* reflects al-Fārābī's own considered views.

ἔτι δὲ τὰ μὲν κατ' ἀριθμόν ἐστιν ἓν, τὰ δὲ κατ' εἶδος, τὰ δὲ κατὰ γένος, τὰ δὲ κατ' ἀναλογίαν, ἀριθμῶ μὲν ὧν ἡ ὕλη μία, εἶδει δ' ὧν ὁ λόγος εἷς, γένει δ' ὧν τὸ αὐτὸ σχῆμα τῆς κατηγορίας, κατ' ἀναλογίαν δὲ ὅσα ἔχει ὡς ἄλλο πρὸς ἄλλο. ἀεὶ δὲ τὰ ὕστερα τοῖς ἔμπροσθεν ἀκολουθεῖ, οἷον ὅσα ἀριθμῶ καὶ εἶδει ἓν, ὅσα δ' εἶδει οὐ πάντα ἀριθμῶ· ἀλλὰ γένει πάντα ἐν ὅσαπερ καὶ εἶδει, ὅσα δὲ γένει οὐ πάντα εἶδει ἀλλ' ἀναλογία· ὅσα δὲ ἀναλογία οὐ πάντα γένει.³⁶⁹

Moreover, some things are one in number [*kat' arithmon*], others in species [*kat' eidos*], others in genus [*kata genos*], and others by analogy [*kat' analogian*]. [Things are one] in number [*arithmō(i)*] if their matter is one, in species [*eidei*] if their formula [*logos*] is one, in genus [*genei*] if they have the same figure of predication [*schēma tēs katēgorias*], and by analogy if they are related as one thing to another.³⁷⁰ And those which are posterior always follow the ones which come before, i.e., the things which [*hosa*] are [one] in number are also one in species, but the things which are [one] in species are not all [one] in number. But all the things which are also [one] in species are one in genus, but those which are [one] in genus are not all [one] in species, but [they are one] by analogy. But the things which are [one] by analogy are not all [one] in genus.

First, it seems most likely that “one in number” here is used in a many-place context (so the “*hōn*” of “*hōn hē hulē mia* [those whose matter is one]” is used collectively, not distributively). The other three senses of unity are employed in many-place contexts, and it would be odd if “one in number” alone was used in one-place contexts, but this is not the only reason. As we see above and in the following passage, Aristotle asserts that what comes before in the presented order of the senses of unity (sc. in number, in species, in genus, by analogy) implies what comes after but not the other way around; for example, “the things which [*hosa*] are [one] in number are also one in species, but the things which are [one] in species are not all [one] in number.” If “one in

³⁶⁹ In Uṣṭāth's translation (544.11-5.6): وأيضا من الأشياء ما هو واحد بالعدد ومنها ما هو واحد بالصورة ومنها واحد بالمساواة ومنها واحد بالجنس فالتى هي واحد بالعدد هي التى عنصرتها واحد والتى بالصورة واحد هي التى كلمتها واحدة والتى بالجنس واحد هي التى شكل محمولها واحد والتى بالمساواة واحد هي التى نسبتها واحدة كنسبة الشيء إلى شيء آخر وفي هذه الأشياء الأواخر أبدا تتبع الأوائل كقولنا إن كل ما كان واحدا بالعدد فهو بالصورة أيضا وما كان واحد بالصورة فليس هو واحدا بالعدد على كل حال بل كل ما كان واحدا بالصورة فهو واحد بالجنس وكل ما كان واحدا بالجنس فليس واحدا بالصورة على كل حال وليس جميع كل ما كان بالمساواة واحدا هو واحد بالجنس.

³⁷⁰ As his language of “... *echei hōs... pros...*” suggests, Aristotle seems to have in mind here four terms such that X is to Y as Z is to W (which would be expressed more completely in Greek as X *echei pros* Y *hōs* Z *pros* W). Aristotle does not specify exactly which two of these four terms are said to be one by analogy, but it seems that the corresponding terms X and Z (or Y and W) are said to be one by analogy.

number” is used in one-place contexts, we would express an incomplete thought if we say that the single thing X which is one in number is also one in species or that it is one in genus or that it is one by analogy; each of these claims expresses an incomplete thought which requires, for its completion, an answer to the question of what is the other thing with which X shares its species (or genus or are one by analogy) so that X is said to be one in species (or genus or by analogy) with this other thing.³⁷¹

Confirming that “one in number” in this passage is used in many-place contexts does not help much to clarify what Aristotle means when he implies that two things or the same thing considered twice are one in number if their “matter [*hulē*] is one.” One of the senses of unity that Aristotle discusses before in Δ.6 is said of things if their subject (*hupokeimenon*) is “undifferentiated in kind [*tō(i) eidei... adiaphoron*],” in the sense that its *eidos* is “undivided with respect to sensation [*adiaireton... kata aisthēsin*]” (1016a17-19). According to some of the examples Aristotle provides to illustrate what he means by this, “all the juices [*chumoi*] are said to be one (e.g., oil and wine), as well as the meltable things [*ta tēkta*], because they all have the same ultimate subject [*to eschaton hupokeimenon*], for all these are water or air” (1016a21-24). In other words, according to a likely interpretation of this sense of unity, e.g., oil and wine are said to be one in this sense because their subjects, meaning matter here,³⁷² are of the same kind, which is water or air.

So, it is possible that when Aristotle says that X and Y are one in number because their matter is one, he means that their matters are one in *eidos* (we do not need to care for our current purpose

³⁷¹ To be clear, my point is that if the one in number is used in one-place contexts, it would be somewhat incongruent for Aristotle to say that what is one in number is also one in species, in genus, and by analogy. That said, the arguments of a two-place term can be filled by the same thing, whether it is being referred to under the same description or not. So even if “one in number,” “one in species,” “one in genus,” and “one by analogy” are all two place terms, we can say that something is one in number with itself or that something considered as X is one in number with that thing considered as Y. The same thing can be said about “one in species,” “one in genus,” and “one by analogy” as well, even though these terms would normally be used to express the relation between two distinct things. For example, it appears that when Aristotle contrasts the perishable and imperishable substances at the very end of *Gen. et Corr.* (at II.11 338b11-19), he says that the perishable substances recur (*anakamptein*) the same in species but not in number while the imperishable substances recur both the same in species and the same in number; so, it seems that the claim that, e.g., the sun recurs the same in species (in addition to recurring the same in number) should mean that the sun as I perceived it yesterday and the sun as I perceive it today are one in species (as well as one in number).

³⁷² See Footnote n.326 above for a passage (*Met. Z.13 1038b2-6*) in which Aristotle explicitly distinguishes (some cases that fall under) the two senses of “subject [*hupokeimenon*]:” 1. matter, i.e., the subject of change, and 2. the subject of predication. More on these two senses of “subject,” see below.

about the qualification Aristotle adds in his characterization of this sense of unity that two things are one in this sense because the *eidos* of their subject is undistinguished “with respect to sensation”). According to this thought, oil and wine are one in number because their matters are of the same kind and not distinct kinds; say, the matter of oil and the matter of wine are both water. This is a sub-case of al-Fārābī’s sense of unity in subject: as mentioned above, al-Fārābī holds that one way in which two things are said to be one in subject (*mawḍūʿ*) is that they are said to be so because their matters (sg. *ʿunṣur*) are one in species. So, when Aristotle says X and Y are one in number, if they are so called because their matters are of the same kind, what Aristotle calls “one in number” would be a sub-case of what al-Fārābī calls “one in subject,” not what al-Fārābī calls “one in number.” So if this is what Aristotle means by “one in number,” this cannot fully explain al-Fārābī’s account of the one in number as he develops it in *KW*.

Another possibility is that when Aristotle says that two things are one in number because their matter is one, he means that their matter is one in number. Indeed, we seem to have both options (their matters’ being one in number and their matters’ being one in kind) in Aristotle’s discussion of the same *per se* (*tauto kath’ hauto*) which follows his discussion of the same *per accidens* or coincidentally (*tauto kata sumbebēkos*) in *Met.* Δ.9. This passage was quoted above in part as T6, and let me quote it in full here. I divide the passage into numbered chunks for ease of discussion:

T9 *Met.* Δ.9 1018a4-9

καὶ τὰ μὲν οὕτως λέγεται ταῦτά, τὰ δὲ καθ’ αὐτὰ ὅσα ἄσπερ καὶ τὸ ἓν· καὶ γὰρ ὧν ἡ ὕλη μία ἢ εἶδει ἢ ἀριθμῷ ταῦτά λέγεται καὶ ὧν ἡ οὐσία μία, ὥστε φανερόν ὅτι ἡ ταυτότης ἐνότης τίς ἐστὶν ἢ πλειόνων τοῦ εἶναι ἢ ὅταν χρῆται ὡς πλείοσιν, οἷον ὅταν λέγῃ αὐτὸ αὐτῷ ταυτόν· ὡς δυσὶ γὰρ χρῆται αὐτῷ.³⁷³

And some things are said to be the same in this way [sc. coincidentally], while [1] others are [said to be the same] *per se* in as many ways as the one; for both [2] the things whose matter is one either [2.a] in species [*eidei*] or [2.b] in number and [3] the things whose substance is one are said to be the same, so that [4] it is clear that sameness is a kind of unity [or, unity of a sort] either of the being of many things or when someone treats

³⁷³ As indicated in Footnote n.352 above, the textus and Averroes’ commentary on it for the part of the *Metaphysics* corresponding Δ.9-10 in the modern editions is not in Averroes’ *Long Commentary* as it reached us.

[something] as many things, e.g., when he says that it is the same as itself, for [in this case] he treats it as two things.

The close association between unity and sameness that we see in this passage and also gather from the surrounding passages justifies our search for help in Aristotle's account of sameness to clarify his characterization of unity in number in *Met.* Δ.6 (in T8), which is our task at hand. As I said above, Aristotle's discussion of the same *per se* in T9 directly follows his discussion of the same coincidentally, and his account of the same coincidentally bears a strong similarity to his account of the one coincidentally.³⁷⁴ Moreover, in (1) in T9, Aristotle explicitly states the correspondence between the ways in which things are said to be the same *per se* and the ways in which things are said to be one *per se*. Concluding his discussion of the ways in which things are said to be the same *per se*, Aristotle says, "sameness [*tautotēs*] is *henotēs tis*," i.e., it is something like unity or it is a special kind of unity. The exact nature of the relation between unity and sameness for Aristotle in general, or in the *Metaphysics* in particular is not my concern here.³⁷⁵

³⁷⁴ There are strong similarities between Aristotle's discussion of the one *per accidens* (*hen kata sumbebēkos*), being *per accidens* (*on kata sumbebēkos*), and the same *per accidens* (*tauto kata sumbebēkos*) (at Δ.6 1015b16-34, Δ.7 1017a7-22, Δ.9 1017b27-18a4 respectively). For a useful discussion of these passages, see Castelli, *Problems and Paradigms of Unity*, 263-4.

³⁷⁵ As I suggest in Chapter 1 Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ, it seems very likely that Aristotle treats the same as a kind or a *per se* attribute of unity. It is worth adding here that in *Met.* Iota 3, Aristotle distinguishes three senses of the same, but this account of the senses of the same is of limited help for us to clarify the senses of the same in T9. Of the three senses of the same distinguished in *Met.* Iota 3, the third sense seems to be restricted to the use of this term in mathematics (it seems, e.g., that two triangles are said to be the same if they are congruent, to use the modern term (i.e., roughly speaking, if they can completely coincide); two triangles are congruent if they are similar and are of the same size: for this sense of the same, see Iota 3 1054a35-b3, b17-8; for the related geometrical sense of the similar (*homoion*), see Iota 3 1054b3-7). As for the first two senses of the same in Iota 3, Aristotle says "the same is said in many ways; [1] in one way [*hena men tropon*] we sometimes speak of the same in number [*kat' arithmon*], [2] but [*to d'*] [in another way, we speak of the same] if it is one both in *logos* and in number, e.g., you are one with yourself both in *eidōs* and in matter [*hulē*]" (1054a32-5). The difference between the two cases is not clear to me. One would expect Aristotle to distinguish the one and the same in number = in matter from the one and the same in *logos* = in *eidōs* here, but that is not quite what he does even though he clearly associates the one in number with the one in matter and the one in *logos* with the one in *eidōs*. It seems to me that, similar to T8, Aristotle should hold that if two things (or the same thing treated twice) is one in number, they are also one in *eidōs* or one in *logos*, but not the other way around, but in that case, the distinction between the two senses of the same in this passage seems to vanish because in that case (1) above would simply entail (2). Perhaps the way out is that in the first case, we consider two different things with different forms but with the same matter (e.g., this bronze anklet I have now and that bronze ring I had yesterday which has been melted and recast as this bronze anklet) while the second case is a stronger version of this where we consider a single particular thing treated twice (e.g., you are the same as yourself). If so, the second case would be of little help in scientific investigations (see Footnote n.389). Below in Iota 3, at 1054b14-23, Aristotle talks about the opposite of the same, which is distinct (*allo*) or other (*heteron*); he says that the distinct is said in as many ways as the same, and he calls the sense of the distinct which is the opposite of the sense of the same used in mathematical contexts the "third" sense of the distinct (1054b17-8); so we would expect Aristotle to present two senses of the distinct, corresponding to the first two senses of the same distinguished above, but he just states that everything is the same as or distinct from everything and more specifically, we can speak of distinct things "unless both the matter and the *logos* are one; this is why you are other

All I want to point out is that they are closely related, and it is justified to look for similarities between Aristotle's account of the same and his characterization of unity in number in T8 to shed greater light on what he means by that characterization of unity in number.

Aristotle does not specify which sense of unity *per se* as distinguished in *Met.* Δ.6 corresponds to which sense of sameness *per se* distinguished in T9, but Aristotle's talk about "the things whose matter is one" as one of the cases of the same *per se* in (2) of T9 uses the very expression which is used in characterizing the one in number in T8. Aristotle goes on to specify two subcases of this case of the same *per se*: the matters of the things at issue are one either (2.a) in number, or (2.b) in *eidos*. The case with the things whose matters are one in *eidos* seems to be the same as or very similar to the sense of unity discussed above according to which, e.g., oil and wine are said to be one because they have the same kind of matter, sc., water. I said above that this is *possibly* what Aristotle means by "one in number" in T8 above. That said, (2.a) provides a good candidate for what Aristotle means by "one in number" too. Accordingly, two things are said to be one in number because their matter is one in number. In fact, Aristotle seems to be taking (2.a) as the primary sense of the same in number in Δ.9, because right after the passage quoted above (T9), Aristotle goes on to assert that the other (*heteron*) is opposed to the same, and he specifies three ways in which things are said to be the other: either because (I.) their species (*eidē*) are many, or (II.) their matters are many, or (III.) the formulae of their substances (*ho logos tēs ousias*) are many (1018a9-11). Although these three ways of the other do not fit *exactly* into the three ways of the same distinguished in T9, the similarities are unmistakable; and since these three ways of the other come right after the three ways of the same *per se*, and since Aristotle says here and in other places³⁷⁶ that the other is opposed to the same, one would expect a correspondence between these three ways of the same and the three ways of the other. Accordingly, the case where (I.)

than your neighbor" (1054b16-7). The implication seems to be that if we have a thing which is one both in matter and in *logos*, even if it is treated twice, we cannot say in any sense that it is distinct from itself, but if we have two things which are the same in *logos* but different in matter, we can say that they are distinct. This perhaps suggests that (1) we can speak of the same in number alone without being the same in *logos* meaning that two things have the same matter without having the same *eidos* (e.g., the bronze ring and the bronze anklet which has been recast as this bronze ring), or (this case is not addressed above in the account of the three senses of the same at 1054a32-b3) we can speak of the same in *logos* alone (e.g., I and my neighbor), or (2) most strictly, we can speak of the same both in number and in *logos* (e.g., I am the same as myself in this sense).

³⁷⁶ As mentioned in Chapter 1 Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ, the opposition between the other (*heteron*) and the same (*tauto*) is implied at *Met.* Γ.2 1004a17-18 and 1003b35-6, Iota 3 1054a20-1, 29-32, and it is clearly stated at *Met.* Iota 3 1054b14-23 (*allo* is used interchangeably with *heteron* at the beginning of this passage). Besides these, at *Met.* Δ.10 1018a38-b8, Aristotle states that *tauto tō(i) eidei* is said in ways opposite to the ways in which *heteron tō(i) eidei* is said.

their species are many seems to be the opposite of the case where (2.b) their matters are one in species; the case where (II.) their matters are many seems to be the opposite of the case where (2.a) their matter is one in number; and the case where (III.) the formulae of their substances are many seems to be the opposite of the case where (3) their substance is one.³⁷⁷ If this is right, it appears that the things whose matter is one in number are said to be the same in respect of matter more properly than the things whose matters are one in species, because the opposite of the former is characterized in terms of their *matter*'s being many while the opposite of the latter is characterized in terms of their *species*' being many.³⁷⁸

I am not claiming that this comparison between the three ways of “the same” said *per se* and the three ways of “the other” in Δ.9 provides a conclusive evidence that when Aristotle says that things are said to be one in number when their matter is one in Δ.6, he means that their matter is one in number; however, this comparison provides some evidence which affords greater preference to the view that the clause “their matter is one” means that their matter is one in number rather than that their matter is one in species. Although Aristotle himself does not provide an example, a reasonable example of things whose matter is one in number would be, to use al-Fārābī's example, an anklet and a crown which is produced by recasting this anklet; the numerically same chunk of silver was the matter of the anklet and now it is the matter of the crown. This is one of al-Fārābī's cases of the one in subject, not the one in number. So, if this is what Aristotle means by “one in number,” this cannot explain fully why al-Fārābī articulates his account of the one in number in the way he does.

I will say more on what Aristotle might mean when he talks about things whose matter is one in number, but before that let me point out that even though Aristotle does not show any explicit

³⁷⁷ That said, what I say above should also be compared with Aristotle's discussion of the other in species (*heteron tō(i) eidei*) at *Met.* Δ.10 1018a38-b8. At the end of this passage, Aristotle asserts that “the same in species [*tauto tō(i) eidei*]” is said in ways opposite to the ways in which “the other in species” is said. As quoted above in Footnote n.375, another passage to take into consideration to spell out Aristotle's idea of the different ways in which *tauto* and *heteron* are said is *Met.* Iota 3 1054a32-b3 (for *tauto*), 1054b14-23 (for *heteron*). Finally, *Met.* Iota 8 also talks about the other in species. It is not my concern here to discuss the agreements and the differences between the accounts in these passages; a fuller discussion of these passages would also benefit from the consideration of Aristotle's account of the other in genus at *Met.* Δ.28 1024b9-16.

³⁷⁸ As I pointed out in Footnote n.375, it is difficult to pin down how exactly Aristotle understands the first two of the three senses of the same he distinguishes in *Met.* Iota 3 and it is not clear how exactly those three senses of the same relate to the three senses of the same and the three senses of the other in *Met.* Δ.9, but as I pointed out in that footnote, it seems from the *Met.* Iota 3 account that the one and the same in number seems to be closely associated with the one and the same in matter, and the one and the same in *logos* seems to be closely associated with the one and the same in *eidos*.

interest in distinguishing the senses of unity used in one-place contexts from the senses of unity used in many-place contexts, this way of understanding Aristotle's sense of unity in number used in many-place contexts described above seems to depend on another sense of unity in number which is used in one-place contexts: two things are one in number because their matter is one in number. So, the "one in number" said of their matter is used in one-place contexts and seems to be conceptually prior to the "one in number" said of these two things. In fact, there are several places where Aristotle uses "one in number" as a one-place predicate along with the statement or the implication that it applies to particulars.³⁷⁹ I want to quote just one passage where this idea is explicitly stated. The ninth aporia in *Met* B.4 concerns the question of whether the principles are one in number or only one in kind (*eidei*). As is his usual practice in *Met. B*, Aristotle provides difficulties that follow from either option. The difficulty that follows from the thesis that each of the principles is one in number is that nothing would exist beyond these principles because these principles, each being one in number, cannot be multiply instantiated for there to be things beyond these principles. To justify this claim, Aristotle adds,

T10 *Met. B.4* 999b33-1000a1

τὸ γὰρ ἀριθμῶ ἓν ἢ τὸ καθ' ἕκαστον λέγειν διαφέρει οὐθέν· οὕτω γὰρ λέγομεν τὸ καθ' ἕκαστον, τὸ ἀριθμῶ ἓν, καθόλου δὲ τὸ ἐπὶ τούτων.³⁸⁰

for it makes no difference to say 'one in number' or 'particular'; for in this way, by 'particular' we mean 'one in number', and by 'universal', [we mean] '[said] of many things [*to epi toutōn*]'.³⁸⁰

³⁷⁹ *Met. M.10* 1086b22-7: a clear contrast with the universal leaves no doubt that "one in number" and "this something (*tode ti*)" refer to particulars. This passage comes up in the discussion of whether the principles are one in number or only one in kind. This issue is also discussed in B.4 (the ninth aporia); T10 is taken from this discussion. *Met. A.8* 1074a31-38: it seems to be implied that particulars (e.g., Socrates) are one in number. *Met. Z.8* 1033b29-32: it seems to be implied that, e.g., the father, a particular human, is one in number, and the son, another particular human, is also one in number, and they are together one in kind. In a comparable context, at *Gen. et Corr. II.11* 338b11-19, apparently speaking of perishable and imperishable *particulars*, Aristotle argues that the imperishable things recur (*anakamptei*) in number and remain the same in number, while the perishable things do so only in kind (*eidei*). Also, see *Cat. 2* 1b6-9: individuals (*atoma*) which are one in number are not said of a subject, unlike the universals (the universals are not named as such (i.e., explicitly as "*katholou*") in this passage, but they are named as such in a very close parallel at *DI 7* 17a38-b1). It also seems that "the same and one in number" at *Cat. 5* 4a10-21 refers exclusively to particulars (see especially the example of a "particular human [*ho tis anthrōpos*]" at 18-21). These examples of Aristotle's use of "one in number" to refer to particulars are not exhaustive.

³⁸⁰ In Uṣṭāth's translation (244.7-10): فإنه لا فصل بين القول الذي يقول واحد بالعدد وبين الذي يقول لكل واحد جزئي لأننا إنما نقول لكل واحد جزئي لا فصل بين القول الذي يقول واحد بالعدد ونقول كلي للذي هو محمول على هذه الجزئية.

Saying that “one in number” and “particular” are used interchangeably might help us answer the question to which things this “one in number” used in one-place contexts applies, but it does not contribute much to our understanding of the sense of unity according to which this “one in number” applies or the particular way in which this “one in number” is used.

Aristotle’s discussion of the sense of unity said of particulars in *Met. Iota 1* seems to be related to this use of “one in number” according to which “one in number” is treated as interchangeable with “particular” or as very closely associated with particulars. In his discussion of the ways in which “one” is said *per se* in *Met. Iota 1*, Aristotle says that some things are said to be one because their formula (*logos*) is one; this is to be understood as their thought’s (*noēsis*) being one, and this means that their thought is undivided; a thought is undivided if it is the thought of something which is undivided (*adiaireton*) in number or in kind (*eidei*). Aristotle goes on to specify that particulars are undivided in number and universals are undivided in kind (1052a29-b1).

Aristotle does not mention “one in number” explicitly in this *Iota 1* passage. However, he holds that lack of division in some respect is a general feature of the ways in which things are said to be one. In other words, whenever we say that things are one, we mean that they are not divided in some respect; the different specifications of this respect yield different senses of unity. So, it stands to reason that “undivided in number” said of particulars in the *Iota 1* passage expresses an idea of unity in number or expresses an idea which is conceptually adjacent to an idea of unity in number.³⁸¹

More needs to be said about Aristotle’s characterization of the way in which particulars are said to be one in *Iota 1*.³⁸² However, it seems that neither this opaque passage from *Iota 1* nor the places where Aristotle uses “one in number” as a one-place predicate applying to particulars

³⁸¹ In *Met. Δ.6*, making a general claim, Aristotle asserts that “... in general, things which do not have division [*diairesis*] are said to be one in the way in which they do not have [division]” (1016b3-5). The only sense of unity which, I think, is outside of this characterization in terms of lack of division is the “one” said of the first measure of a genus (see *Iota 1* 1052b15-19, *Iota 3* 1054a20-29, *Iota 6* 1056b16-1057a17). So it is either common to all the senses of unity that things are said to be one because they are not divided in some respect, or the only exception to this characterization is the sense of unity *qua* the first measure of a genus, which is clearly different from the sense of unity said of particulars in the passage under consideration here. More on the sense of unity *qua* the first measure of a genus and how it compares with the other senses of unity, see Chapter 3 Section 3 and the Conclusion Chapter.

³⁸² For an informed discussion of these ways in which particulars and universals are said to be one in *Met. Iota 1*, see chapter 5 in Castelli, *Problems and Paradigms of Unity*.

mentioned above are the direct source for al-Fārābī's idea of unity in number. To begin with, al-Fārābī's idea of unity in number does not hold only of particulars; it also holds of universals. Moreover, recall that al-Fārābī's unity in number grounds the senses of unity used in many place contexts, and it is the complementing counterpart to these senses of unity used in many place contexts. So if Z is said to be one in number according to al-Fārābī's sense, it must be considered in its relations to X and Y, and when we say Z is one in number we mean that what is related to X and what is related to Y are not distinct things but one and the same thing, i.e., Z. Nothing like this is suggested in Aristotle's use of "one in number" in one-place contexts applying to particulars as mentioned above, or his discussion of the sense of unity of the particulars in *Met.* Iota 1.

The close relation between the ideas of sameness and unity in al-Fārābī's account of unity in number suggests that we should look for the basis for al-Fārābī's account of unity in number in Aristotle's discussion of the one in number in connection with the same. I suggested above that one way to understand Aristotle's claim in $\Delta.6$ that X and Y are one in number because their matter is one is to read it along with his discussion of the senses of the same *per se* in $\Delta.9$. Accordingly, one way to understand the claim that their matter is one is that their matter is one in number. I suggested that this could mean that they have the same particular matter successively: as in al-Fārābī's example, we have a silver anklet, and then this is melted, and a crown is cast out of it. The matter of the anklet and the matter of the crown are one in number. In this example, "matter" is understood as the subject of change, and in particular, of substantial change.³⁸³ In fact, Aristotle often uses "matter" to mean the subject of change (in contexts of analyzing actual or potential change),³⁸⁴ and it is not limited to substantial change. Aristotle calls the subject of

³⁸³ For our current purpose, we do not need to worry about whether according to Aristotle's considered opinion artifacts can be substances or there are only natural substances.

³⁸⁴ The non-technical sense of "*hulē*" as "raw material" was extended for philosophical use, and we can distinguish at least three different but related technical senses of "*hulē*" in Aristotle. First, Aristotle often uses "matter [*hulē*]" in the sense of the subject of change in general; directly depending on this sense, to explain the structural complexity of perceptible substances in terms of form and matter, he also uses "matter" express the part or the aspect of the perceptible substance that corresponds to the subject of substantial change. The examples of the use of this term in the sense of the subject of change (or directly depending on this sense) are too many to mention here. I just want to mention three passages in which Aristotle generally states this point: "in everything which comes-to-be [*en panti tō(i) ginomenō(i)*] matter is present" (*Met.* Z.8 1033b18-9); "nor is there matter of everything but only of those things of which there is coming-to-be [*genesis*] and change [*metabolē*] into each other" (*Met.* H.5 1044b27-8); "all the things which change [*metaballei*] have matter" (*Met.* A.2 1069b24-5). Parallel to the use of "form" and "matter [*hulē*]" to explain the structural complexity of perceptible substances

“*hulē*” is also used as a technical term by Aristotle to mean the subject-like component in the structural complexity of mathematical objects and the subject-like component in the complexity in definitions. The term “*hulē*” is not used according to these two latter senses as often as it is used according to the first sense but these two latter senses are also clearly present in the *Metaphysics*. According to the second sense, Aristotle uses “*hulē*” to signify a so-called mathematical matter: Aristotle seems to be talking about mathematical matter at *Met.* H.6 1045a33-5 (I think that Jaeger’s proposal to excise “οἷον ὁ κύκλος σχῆμα ἐπίπεδον” only based on the fact that it is not in Ps-Alexander is not an adequate reason, and I do not see any good contextual reason that dictates excising this phrase), and at *DA* III.4 429b18-20 (compare the *Met.* H.6 passage with *Met.* Δ.28 1024a36-b4 and 8-9, and compare the *DA* passage with *Met.* Z.11 1036b7-13). There are some related passages in *Met.* Z.10 and 11 which talk about particular mathematical objects, like a particular mathematical circle, in contrast with particular instantiations of mathematical figures in perceptible matter, like a particular bronze circle; at Z.10 1036a2-12 and Z.11 1036b32-1037a5, Aristotle makes an explicit distinction between “perceptible matter [*aisthētē hulē*]” and “intelligible matter [*noētē hulē*]” and the latter seems to refer to the mathematical matter (that matter could be perceptible or intelligible was also mentioned right before the *Met.* H.6 passage quoted above). Also, at Z.10 1036a20-22 Aristotle seems to make the same distinction between a particular bronze right angle and a particular mathematical right angle which is “in particular lines,” and he says that both are “with matter [*meta tēs hulēs*].” Besides, in the context of the discussion of whether the accounts of the parts are cited in the account of the whole and whether the parts are prior to the whole in Z.10, Aristotle mentions several mathematical examples, and it appears in these examples that the segments (and semicircles) of a circle are its material parts, half lines are material parts of a line, and perhaps also an acute angle is a material part of a right angle (see 1034b24-8, 1034b28-32, 1035a9-14, 1035a17-21, 1035a31-b3, and 1035b4-14). According to the third sense of “*hulē*” used by Aristotle as a technical term, Aristotle uses this term referring to the genus as underlying the differentiae. A general and clear expression of this use of “*hulē*” is in *Met.* Δ.28 (the chapter on “*genos*”), at 1024a36-b9 (more on this, see Footnote n.392 below). Also, Aristotle considers the genus “as matter [*hōs hulē*]” and the differentiae as forms at Z.12 1038a6-8. Moreover, Aristotle says in *Met.* Iota 8 that “the genus is the matter of that of which it is said to be the genus,” taking into consideration the surrounding argument suggests that the genus is the matter of the species under it (1058a21-25), apparently with the implication that the combination of the genus as matter and the differentia as the form produces the species. Along with these passages, compare *Met.* Δ.6 1016a26 where Aristotle says that the genus is the subject (*hupokeimenon*) of its differentiae. Besides these passages where the genus is called matter in respect of its underlying the differentiae (and constituting the species when it is combined with a differentia), there are passages that *associate* genus with matter. For example, at *Met.* Iota 3 1054b28-30 Aristotle characterizes the things which differ in genus as the things “which neither have their matter in common nor are subject to generation into each other, e.g., the things whose figure of predication is different.” Also, in *Met.* H, it is implied that the differentia is associated with the form and the genus is associated with the matter: Aristotle says in H.3 that “... since the definitory account [*ho logos ho horistikos*] signifies something [said] of something, and one must be as matter, and the other as form...” (1043b30-2). Indeed, after talking about definitions citing the material components and the form (like the definition of a house as stones etc. put together in this way in order to perform the function of a shelter), Aristotle asserts in H.2, “for it seems that the *logos* through the differentiae [*dia tōn diaphorōn*] is of the form and the actuality, while the [*logos*] from the components is rather of the matter” (1043a19-21). This last passage does not mention the genus, but if the traditional genus + differentia format of the definition is to be reconciled with the account of definitions in these passages, the genus should be associated with the material components and thus with matter. The uses of “*hulē*” signifying mathematical matter or the genus as underlying the differentiae are limited both in the sense that the term is used in these two senses in a relatively few passages with clearly delineated scope and that the theoretical significance of these passages in Aristotle’s overall metaphysical project is limited compared to the centrality of the idea of matter as the subject of change (or the ideas of matter directly piggy-backing on the idea of the subject of change). In short, if there is no clear and strong reason to assume that Aristotle means the mathematical matter or he refers to the genus in relation to the differentiae by his use of “*hulē*,” we should assume that he talks about the subject of change, or even if his discussion does not directly concern change but rather a specific sort of structural complexity (i.e., that perceptible substances are composed of form and matter), what he means by “*matter*” as part of such a structural complexity is not to be understood as divorced from the idea of the subject of change.

change in non-substantial change “matter” too.³⁸⁵ So when “matter” is used in this sense, it seems to mean generally the subject of change.³⁸⁶ According to the general account of change in *Physics* I.4-9 (especially, Chapter 7), in the alteration of a person from being unmusical into being musical, the subject of change, or the matter for this alteration, is the person.³⁸⁷ If we are to understand this example on a par with the anklet and the crown example, we should say that the unmusical (person) and the musical (person) are one in number because the matter of them (i.e., the subject of this alteration) is one in number, sc., this person. It is worth bearing in mind that from al-Fārābī’s perspective, we should distinguish the sense of unity said of the unmusical and the musical together (they are said to be *one in subject*) from the complementing counterpart sense of unity said of their subject, the person at issue (this person is said to be *one in number* insofar as he is considered as the subject of the unmusical and as the subject of the musical). Although Aristotle does not seem to be distinguishing these two cases clearly,³⁸⁸ we are getting

³⁸⁵ Non-substantial change: *Met.* Z.7 1033a8-10. Both substantial and non-substantial change: H.1 1042a32-b6, *Gen. et Corr.* I.4 320a2-5.

³⁸⁶ For example, *Phys.* I.9 chiefly uses “matter [*hulē*]” for the subject of change, while “*to hupokeimenon*” or other closely related terms are preferred in the earlier chapters of *Phys.* I.

³⁸⁷ This example is first presented at *Phys.* I.7 189b34-190a1 and the account of change illustrated by this example is discussed in the rest of the chapter.

³⁸⁸ Unity in subject and unity in number are also sometimes not clearly distinguished in al-Fārābī (e.g., in *Kitāb al-Jadal* v.3 p.90). Two apparently corrupt passages in *KW* make it ambiguous as to whether al-Fārābī conflates the one in number with the one in subject in *KW* too. The first passage is from *KW* 5. At the beginning of this paragraph, all the three mss. has *الواحد بالعدد ما معنى الواحد بالعدد* (39.15 = 42.10-11); right after this, al-Fārābī distinguishes different senses of unity in subject. That said, Mahdi adds *الموضوع* right after *معنى*; I agree with Mahdi that this passage should be emended as I explain in the following, but it would be better to add *الواحد بالموضوع* or something along these lines instead of Mahdi’s *الموضوع* because in what follows al-Fārābī does not directly talk about what the subject which is one in number means (as Mahdi’s emendation would have it), but rather, he talks about what the one by virtue of the subject which is one in number means (as my emendation has it). Also, my emendation can be easily explained as fallen out of the text due to homoiarcton while Mahdi’s emendation cannot be as easily explained. The need for emendation can be seen from the context. First, al-Fārābī just talked about things which are said to be one because their predicate is one in number; in the rest of *KW* 5 (40.1-1-14 = 42.12-43.6), al-Fārābī talks about the cases of the one in subject which are characterized as such in the reviews of the senses of the one in the rest of *KW* (e.g., *KW* 86 = 75.5-9) (this can be observed in the characterizations of the corresponding senses of multiplicity too); so it would make sense for him to indicate at the beginning of *KW* 5 his move to the discussion of things which are said to be one because their subject is one in number. Moreover, at the beginning of the next paragraph (*KW* 6 41.5 = 43.7) al-Fārābī announces, “so now we must talk about what the one in number is,” and he discusses the one in number explicitly in the following three paragraphs (*KW* 6, 7, 8 = 43.7-45.11); if we do not emend the beginning of *KW* 5, it would look awkward for al-Fārābī to announce at the beginning of *KW* 5 that he will talk about the one in number without talking about it directly in the rest of *KW* 5 and then at the beginning of *KW* 6, announce again that now he will talk about the one in number.

The second apparently corrupt passage which seems to suggest that al-Fārābī conflates the one in subject with the one in number is found in *KW* 63. After briefly going through the cases of the one in predicate, al-Fārābī states what is common to all the cases of the one in predicate: *تجتمع في أن تكون الأشياء <الكثيرة واحدا بالمحمول الواحد بالعدد>* (76.11-12 = 64.4-5). Right after this, the text printed in both editions has it that al-Fārābī jumps to state what is common to all the cases of “*al-wāḥid bi-l-naw‘ aw bi-l-‘adad*”: *والواحد بالنوع أو بالعدد تجتمع في أن تكون الأشياء الكثيرة واحدا بالموضوع الواحد* (76.12-3 = 64.6-7). The sentence which states what is common to all the cases of the one in predicate at 76.11-

closer to al-Fārābī's idea of unity in number when we consider Aristotle's use of "(one and) the same in number" expressing two things pertaining to a single thing or two considerations of a single thing.³⁸⁹ However, insofar as the common subject is understood as limited to the subject of change, as Aristotle's characterization of the one in number in terms of the unity of the *matter* suggests, we cannot capture the generality of al-Fārābī's idea of unity in number. One step forward to advance towards the generality of al-Fārābī's idea would be to make the unity and sameness in number in Aristotle as discussed so far not limited to the subject of change, but to consider it more generally in terms of the subject of predication.

12 = 64.4-5 has almost the same formulation as the second sentence at 76.12-3 = 64.6-7. This second sentence clearly states what is common to the cases of *the one in subject*: since al-Fārābī says that it is common to these cases that "several things are one by virtue of the subject which is one in number," these cases must be the cases of the one in subject. So this claim should not be about "the one in species or in number" as the printed text in both editions has it. Even if we grant that al-Fārābī conflates the one in number and the one in subject here, it does not make sense at all for him to say also that things are said to be one in species because their subject is one in number; besides, he already talked about the one in species a few lines above in his review of the cases of the one in predicate. Also, we would expect al-Fārābī to briefly go through the cases of the one in subject before making this statement about what is common to the cases of the one in subject, because in this paragraph, *KW* 63, al-Fārābī first reviews the one in predicate, as already mentioned, and after the sentence at issue here at 76.12-3 = 64.6-7, he goes on to review the one *qua* continuous and the one *qua* a totality, and concludes the paragraph by saying that all these are said to be one because something about them is one in number and this is the cause of their unity (*KW* 63 77.5-9 = 64.15-8). So, I think that the beginning of the second sentence (76.12-3 = 64.6-7) is corrupt and a passage is omitted under the influence of the strong similarity in the language of the first sentence (76.11-12 = 64.4-5) and the second sentence. If we assume that a relatively long passage, maybe a full line, fell out which summarizes all the subcases of the one in subject, the second sentence can be emended as follows: *والواحد >في أن يحملا عرضان أو جنس و عرض أو نوع و عرض على موضوع واحد بالعدد والواحد في أن عنصرها القريب أو البعيد واحد< بالنوع أو بالعدد تجتمع في أن... الواحد >في أن موضوعها واحد بالعدد أو عنصرها واحد<* if we want to be more conservative with our emendation, we can emend the second sentence as follows: *بالنوع أو بالعدد تجتمع في أن... الواحد >في أن... الواحد في أن... واحد بالنوع أو بالعدد* (Mahdi omits one of these two cases which is correctly restored in the edition by Martini Bonadeo and her team at 64.2-3); for a summary of the cases of the one in subject, consider *KW* 86 = 75.5-9. In any case, even if one wants to insist that in these two passages (namely, the passages in *KW* 5 and *KW* 63) al-Fārābī conflates the one in number with the one in subject, in the rest of *KW*, he does not conflate the one in subject with the one in number and he clearly distinguishes them in the relevant passages some of which are discussed in detail in Section 1.

³⁸⁹ There is also the trivial boundary case where one thing is said to be the same as itself, considered in the same respect. Aristotle's examples at *Met.* Δ.9 1018a9 ("it is the same as itself") and at *Met.* Iota 3 1054a34-5 ("you are [the same as] yourself") seem to exemplify such a trivial boundary case. That said, it is unlikely that Aristotle would find much theoretical interest in such trivial boundary cases. Perhaps an indication of this is his argument in *Z.* 17 that in a fruitful scientific inquiry the 'why [*dia ti*]' question should be posed as why something belongs to *another* thing, not as why something is the same thing; e.g., rather than asking why a human is human, the answer to which would at best be too general and uninformative ("*koinon ge kata pantōn kai suntomon*" (1041a20)), we should identify the material subject of a human being (say, a sort of organic body) and investigate why a body disposed in such way is human. As Menn points out in *Al-Fārābī's Kitāb al-Ḥurūf*, 86, al-Fārābī draws on this passage in *KH* 244. In any case, as we will see below, al-Fārābī is interested in cases where "the same" is said in reference to one thing but according to two distinct considerations so that a claim of the form "X is the same as Y" would be an informative claim, even though "X" and "Y" are assumed to be referring to one and the same thing.

As quoted in full in Footnote n.326, Aristotle points out two senses of “subject [*hupokeimenon*]:” it means either “a this something [*tode ti*], e.g., the animal [underlying] its properties,” or “the matter [underlying] the actuality” (*Met. Z.13* 1038b5-6). This brief passage does not capture the full extent of the cases of “*hupokeimenon*” in the sense of the subject of predication, but it is indicative of Aristotle’s awareness of the distinction between the use of “*hupokeimenon*” in the sense of the subject of predication in general, and the use of this term as the subject of change, i.e., what Aristotle often means by “matter.”

To put it very roughly, according to the analysis of change laid out in *Physics* I, change can be analyzed as follows: the form F is not predicated of the subject now and then the form F comes to be predicated of it. For example, the unmusical (person) comes to be the musical (person). Here, “the unmusical” indicates the privation, “the musical” the form, and “the person” the subject of change which persists through this change.³⁹⁰ According to this analysis of change, the subject of change can in a sense be understood as a subject of predication. That said, it does not generally hold the other way around. For example, according to *Cat. 5*, the animal (kind) and the human (kind) are predicated of a particular human being. Clearly, this claim does not indicate that a particular human being changes from being an animal into being a human or from being a human into being an animal.³⁹¹ Even if we restrict our consideration to the predication of accidents, the mere claim that tall and heavy are predicated of a particular human being does not indicate that we talk about a person changing from being tall into being heavy or the other way

³⁹⁰ I want to emphasize that this is a rough picture of Aristotle’s analysis of change in *Phys. I*, and this analysis of change leaves out, for the most part, the ideas of potentiality (*dunamis*) and actuality (*entelecheia*, *energeia*). *Phys. I.8* 191b27-9 explicitly defers an analysis of change in terms of potentiality and actuality to another place. It is worth noting that in *Phys. I.9* Aristotle seems to be *forcing* the language of “potentiality [*dunamis*]” (at 192a7; maybe also at 192a2) on his earlier analysis of the thing which comes to be as being one in number but two in kind or *logos* where the subject persists through the change but the privation does not (for the earlier presentation of this analysis, see *Phys. I.7* 190a13-21, 190b10-17, 190b23-7; this account is employed in *Phys. I.8* to solve the aporia raised by the monist argument against change and multiplicity). I do not get into the details of this analysis of change in *Phys. I*, and I do not spell out what Aristotle means by “predication” in the relevant contexts. Nonetheless, I think that the general point I am making here about the use of predication in the analysis of change should agree with a range of more precise interpretations of this analysis of change in *Phys. I* and what Aristotle means by “predication” in the relevant contexts. I should add that this analysis of change is not restricted to *Phys. I*. We see it also in the rest of the *Physics* (e.g., *Phys. V.1* 224b1-5) and in other works by Aristotle including the *Metaphysics* (e.g., *A.1-2* 1069b3-15, 32-4, *A.4* 1070b11-3, 18-9).

³⁹¹ Also, according to one of the cases of unity *per accidens* discussed in *A.6*, Aristotle might allow us to say that human and musical are one *per accidens* because both are predicated of the same subject, Coriscus (although musical and human are differently predicated of him). The extended passage is at 1015b28-34. To be clear, the case under consideration explicitly concerns, e.g., the claim that human and *musical human* are the same, but I am making my conjecture about human and *musical* based on Aristotle’s second explanation about the *per accidens* unity of human and musical human at 1015b31-4.

around. To repeat, according to my rough summary of one of Aristotle's analyses of change, the talk of a subject of change implies that there is a subject of which a form was not predicated but then comes to be predicated; so the talk of a subject of change is the talk of a subject of predication *plus* some other considerations.

Let me summarize the discussion so far. Aristotle uses "one in number" in many-place contexts or in one-place contexts. The use of "one in number" in one-place contexts is unlikely to be the primary source of al-Fārābī's idea of unity in number. Also, going along with this, Aristotle's discussion of the unity of the particulars in Iota 1 is also unlikely to be the primary source of al-Fārābī's idea of unity in number. The closest we can get to al-Fārābī's idea of unity in number in our preceding discussion of Aristotle's use of "one in number" in many-place contexts is to take Aristotle's characterization of the one in number in Δ.6 in terms of the unity of matter to indicate that the subject of change, i.e., matter, is one and the same thing in number in the process of this change. However, restricting this account of unity in number to *the subject of change* is too narrow compared to al-Fārābī's idea of unity in number. We would get nearer to the generality of al-Fārābī's idea if we talk, instead, more generally about *the subject of predication*.

In Aristotle's account of the one in number in the *Met.* Δ.6 passage under consideration, i.e., T8, it seems unlikely to me that Aristotle uses "matter" in the sense of the subject of predication simply and generally. At any rate, if by "matter" Aristotle means the subject of predication simply and generally in this passage, he unnecessarily confuses his reader because he could express this idea clearly if he used "subject" (*hupokeimenon*) instead of "matter." That said, as sketched out in Footnote n.384 above, apart from the subject of change, Aristotle uses "*hulē*" to mean the mathematical matter and he also uses it to mean the genus underlying the differentia. I do not see any reason to think that Aristotle means the mathematical matter when he uses "*hulē*" in the characterization of the one in number in T8. I do not think that Aristotle means the genus as underlying its divisive differentiae when he uses "*hulē*" in the passage under consideration either, but the use of "*hulē*" to refer to the genus underlying its differentiae suggests Aristotle's readiness to use "*hulē*" in the sense of the subject of predication generally.³⁹² So I think it is

³⁹² As I indicated in Footnote n.384 above, the passage in which Aristotle clearly expresses the use of "*hulē*" to refer to the genus as underlying the differentiae is from *Met.* Δ.28, the chapter on "*genos*." In this chapter, Aristotle first distinguishes the four senses of "*genos*:" of these, the third and the fourth are relevant here: "furthermore, [the genus is said] as the plane [*to epipedon*] is the genus of the plane figures [*tōn schēmatōn... tōn epipedōn*], and the solid [*to stereon*] of the solid [figures]; for of each figure, some are this sort of a plane, and the others are this sort of a solid.

unlikely but possible for Aristotle to mean the subject of predication simply and generally by “*hulē*” in the characterization of the one in number in T8. In any case, we find a clear characterization of (the one and) the same in number in terms of two things’ being predicated of the same subject in *Top.* I.7, and as we will see from al-Fārābī’s *Kitāb al-Jadal* (*Book of Dialectics*) and the parallel passage in *KW*, this *Top.* I.7 account of (the one and) the same in number was al-Fārābī’s direct source for articulating his general idea of the one in number with the features that allow it to ground all the senses of unity used in many-place contexts as discussed above.

Section 5: Al-Fārābī’s direct source: the same in number in *Topics* I.7

In *Top.* I.7, Aristotle distinguishes three ways in which things are said to be the same: in number, in species, and in genus. For example, a human being is the same in species as another human being, while a horse is the same in genus as a human being. Aristotle initially asserts that the same in number is said with respect to things “whose names are many while the thing [*pragma*]

And this is the subject [*hupokeimenon*] of the differentiae. Furthermore, [the genus is said] as the primary component in the *logoi*, which is said in respect of what it is [*en tō(i) ti esti*]; for this is the genus of which the qualifications [*hai poiōtētes*] are said as differentiae” (1024a36-b6). These two cases of the use of “*genos*” seem to be closely related, because in the following summary of the senses of “*genos*,” these last two seem to be treated together: after summarizing the first two, Aristotle appears to summarize the third and the fourth together: “and [the genus is said] also as matter; for that of which the differentia and the qualification are [said] is the subject, which we call ‘matter’ [...τὸ δ’ ὡς ὕλη: οὗ γὰρ ἡ διαφορὰ καὶ ἡ ποιότης ἐστὶ, τοῦτ’ ἐστὶ τὸ ὑποκείμενον, ὃ λέγομεν ὕλην].” Accordingly, if we say that the plane is the *hulē* of a plane figure (e.g., the triangle), and that animal (genus) is the *hulē* of, say, rational (*differentia*), “*hulē*” is clearly not used in connection with its sense of the subject of change, but in some other sense of subject (*hupokeimenon*). As we saw above, in a sense the differentiae are said of the genus; in this respect, the genus is their subject of predication. So, it seems that here we have a use of the term “*hulē*” in the sense of the subject of predication, but with a restricted scope, i.e., referring to the genus as the subject of the differentiae. In his discussion of the sense of unity in genus in *Met.* Δ.6, Aristotle expresses the same idea, but he calls the genus the “subject [*hupokeimenon*]” of the differentiae and he states that the case of the things which are one in genus is “in a very similar way [*tropon dē paraplēsion*] to the things whose matter [*hulē*] is one” (1016a24-8). Even if in this passage Aristotle does not call the genus “*hulē*” to express the idea that the genus underlies its differentiae, the fact that this idea is in Δ.6 and the fact that Aristotle uses “*hulē*” in other places to refer explicitly to the genus as the subject of the differentiae might suggest that he also means the genus underlying the differentia by “*hulē*” when he characterizes the one in number in Δ.6. However, it would be quite strange if Aristotle meant that two divisive differentiae of the same genus are one in number because their matter, i.e., their genus, is one when he talks about the one in number in the Δ.6 passage under consideration. In short, it is unlikely that when Aristotle says that the “*hulē*” of those which are said to be one in number is one in T8 in *Met.* Δ.6, he talks about mathematical matter or he refers to the genus as underlying the differentiae. That said, since he uses “*hulē*” to refer to the genus as the subject of predication for its differentiae, we should not be surprised if Aristotle used “*hulē*” to mean the subject of predication even when the relevant subject was other than a genus, as in the characterization of the one in number in T8.

is one, e.g., mantle and cloak [*lōpion kai himation*]” (103a9-10). A few lines below, he goes on to distinguish the subcases of the same in number:

T11 *Top.* I.7 103a23-31

μάλιστα δ’ ὁμολογουμένως τὸ ἐν ἀριθμῷ ταῦτόν παρὰ πᾶσι δοκεῖ λέγεσθαι. εἴωθε δὲ καὶ τοῦτο ἀποδίδοσθαι πλεοναχῶς· κυριώτατα μὲν καὶ πρώτως ὅταν ὀνόματι ἢ ὄρφ τὸ ταῦτόν ἀποδοθῇ, καθάπερ ἱμάτιον λωπίῳ καὶ ζῶον πεζὸν δίπουν ἀνθρώπῳ· δεύτερον δ’ ὅταν τῷ ἰδίῳ, καθάπερ τὸ ἐπιστήμης δεκτικὸν ἀνθρώπῳ καὶ τὸ τῇ φύσει ἄνω φερόμενον πυρί· τρίτον δ’ ὅταν ἀπὸ τοῦ συμβεβηκότος, οἷον τὸ καθήμενον ἢ τὸ μουσικὸν Σωκράτει· πάντα γὰρ ταῦτα τὸ ἐν ἀριθμῷ βούλεται σημαίνειν.³⁹³

It seems with the greatest agreement shared by everyone [*malista d’ homologoumenōs... para pasi*] that what is one in number is said to be the same. But it is usual to render [*apodidosthai*] this in more than one way: [it is so] most strictly [*kuriōtata*] and primarily [*prōtōs*] when ‘the same’ is rendered [1.a] by a name or [1.b] a definition, e.g., cloak [is the same as] mantle and two-footed land animal [is the same as] human; secondly, when [‘the same’ is rendered] [2] by a proprium, e.g., what is receptive of knowledge [is the same as] human, and what moves upwards by its nature [is the same as] fire; thirdly, when [‘the same’ is rendered] [3] from an accident [*apo tou sumbebēkotos*], e.g., what is sitting or what is musical [is the same] as Socrates. All these tend to [*bouletai*] signify what is one in number.

As we see in this passage which comes right after the discussion of the same in species and the same in genus, Aristotle indicates that of the three ways in which “the same” is said, the same in number has some priority: as he puts it, of the ways in which things are said to be the same, the one and the same in number has the widest acceptance. Emphasizing this point further, at the beginning of *Top.* VII which deals with the *topoi* of the same and the different, apparently referring back to *Top.* I.7, Aristotle says, “it was said that what is one in number is the same most strictly [*kuriōtata*]” (151b29-30). Then he goes on to distinguish the three sub-cases of the same

³⁹³ Al-Dimashqī’s translation of this passage is as follows (*Manṭiq Aristū*, p.500 lines 6-13):

والشيء بعينه في العدد قد يُظن بالإجماع عند الناس كلهم أنه أولى ما يوصف بذلك. وقد جرت العادة بأن هذا المعنى يقال على أنحاء كثيرة، أحقها وأولها بالتقديم ما وصف واحدا بعينه بالاسم أو بالحد، كالحال في الثوب والرداء، وفي قولنا للإنسان: حي مثناء ذو رجلين. والنحو الثاني ما كان كذلك بالخاصة، كالحال في قولنا: قابل للعلم – في الإنسان، وفي قولنا: سام إلى فوق بالطبع – في النار. والنحو الثالث ما وصف بذلك [HG: كذلك؟] من العرض كقولنا: جالس، أو موسيقار – في سقراط. فإن جميع هذه من شأنها أن تدل على الواحد في العدد.

in number. The examples suggest that in each case, one of the two expressions which convey³⁹⁴ a sameness in number claim about a thing is the name of this thing; the other expression is (1.a) another name for this thing or (1.b) its definition, or (2) its proprium, or it is (3) “from an accident [of the thing] [*apo tou sumbebēkotos*],”³⁹⁵ e.g., Socrates is the same as what is sitting (*kathēmenon*) or what is musical (*mousikon*). As Aristotle suggests in the passage which immediately follows T11 (103a32-9) and in an earlier passage on the same subject (102b21-26), this example is to be understood in the context of a place where Socrates is the only sitting (or musical) person so that we can successfully refer to him using his name or using the expression “the seated (one)” which picks out Socrates and only Socrates in the context of this place.

Also, although *Top.* I.7 is primarily on the senses of the same as Aristotle also puts it explicitly at the beginning of the chapter (103a6-8), it is clear that “one” is closely associated with “the same” or perhaps they even have the same meaning, especially in connection with the same in number as we see in T11 (see the first and the last sentences).

Moreover, what is said to be the same in number in (1) and (2) do not seem to be limited to particulars. In fact, in (1.b) and (2), what is said to be the same in number seems to be primarily a universal because, e.g., in the claim (1.b) that two-footed land animal is the same in number as human or (2) that what is receptive of knowledge is the same in number as human, “human,” “two-footed land animal,” and “what is receptive of knowledge” seem to refer, primarily, to the human kind, i.e., a universal.³⁹⁶ Furthermore, in (1.a) what is said to be the same can be a

³⁹⁴ I borrow this language of “conveying” from Castelli to emphasize that the term “same in number” here does not express a relation which holds between two linguistic expressions. As Castelli aptly puts it, sameness in number is “conveyed” by a pair of expressions and the language of “conveying” is “to indicate that numerical sameness is expressed or displayed through linguistic means, without implying that numerical sameness is a relation holding between linguistic expressions” (Castelli, *Problems and Paradigms of Unity*, 260-1). The warning that when Aristotle talks about sameness using two expressions, he does not talk about a relation between these expressions is much older. Already Alexander alerts his readers on this point in his commentary on the passage about the same in number in *Top.* I.7: “... since the names themselves on their own are not the same in number, but what is denoted by the name and what is denoted by the definition...” (60.7-9).

³⁹⁵ More on the phrase “from an accident [*apo tou sumbebēkotos*],” see *Top.* I.5 102b14-20.

³⁹⁶ Aristotle argues in *Met. Z.15* that particulars are not definable. That said, as I understand the argument about the kinds which actually have a single member (like the sun) at 1040a27-b2, Aristotle’s point in this argument seems to be that the kind of sunness is defined, and since this kind is *actually* instantiated in one particular, of all the actual particulars in the world, the definition of sunness applies only to that particular, but that particular *qua* a particular is not defined because the definition of sunness does not distinguish our *actual* particular sun from all the *possible* particular suns. It seems that Aristotle’s argument for the uniqueness of the heaven (*ouranos*) in *DC* I.9 also agrees with this idea: even though the form of our actual particular heaven *can* be multiply instantiated in different chunks of matter, Aristotle argues that *in fact* there is no matter left out of our actual particular heaven for its form to instantiate another heaven outside of our actual particular heaven. In other words, there *can* be *multiple* heavens, but

universal; it is possible that Aristotle uses “mantle” and “cloak” as an example referring to a kind of clothing. Even if Aristotle did not mean his examples of “mantle” and “cloak” to refer to a kind of clothing, many languages have two different names for the same animal species, and I do not see any reason why Aristotle would deny that an animal species can have two distinct names.³⁹⁷ Although the example in (3) (what is sitting (or what is musical) is the same as Socrates) is of a particular, in principle, it seems that the way in which “the same in number” is used in (3) can also apply to a universal: for example, if we assume that all camels have brown fur and that no elephants do, in the context where only the camel (kind), and the elephant (kind) are considered, “brown furred” refers to all camels and only to camels; so it seems reasonable to say that in this context, camel and brown furred are the same in number.³⁹⁸

actually there is only *one* because of the fact about reality that there is no matter left outside of our actual particular heaven.

In short, if I understand the argument of the *Met.* Z.15 passage correctly, the definition of sunness does not *define* our actual particular sun, but *in actuality* it applies *only* to it. In such cases, it seems possible to state the sameness in number of our actual particular sun using its name, “sun,” and the definition of sunness, even though the definition of sunness is *not* the definition of our actual particular sun *qua* this particular thing. Even if we take this as a loose example of case (1.b) of the same in number applying to a particular, the kinds with a single member seem to be limited to the eternal things (*aidia*). So a great majority of the kinds have *actually* multiple members so that the definition of each actually picks out multiple particulars. It also seems that the great majority of the propria apply to a kind which *actually* has multiple members. At least, Aristotle’s examples in the passages under consideration (*Top.* I.4-8) are all like that. Nonetheless, as it will become clear in my discussion of case (3) of the same in number, the denotation of an expression can be contextually restricted. For example, if we restrict our consideration to a room in which there is only Socrates the human and Bucephalus the horse, the definition of the human kind would apply to Socrates and only to Socrates in this context. I want to underline that such cases would not be *standard* examples of (1.b) or (2), but it does not seem to me that Aristotle has a clear stance on excluding such cases.

³⁹⁷ Even if Aristotle meant his examples of “mantle” and “cloak” to refer to a kind, as far as I can see, Aristotle does not say anything that forces us to assume that the case (1.a) applies exclusively to universals. In other words, it seems to be possible to have a particular with two names like the Romans each of whom has several names, as Porphyry says in his discussion of polyonymy (e.g., “cloak [*himation*]” and “mantle [*lōpion*]”) in his short *Categories* commentary at 69.8-9; more on polyonymy, see Footnote n.406 below. In fact, al-Fārābī considers such cases with *particulars* with multiple names in his discussion of the one and the same in number in *KW* and he also mentions mantle and cloak as an example of a *species* with multiple names: on this last point, see T13 below.

³⁹⁸ This example is adapted from Aristotle’s discussion of the propria at a time (*pote*) and in relation to something (*pros ti*), i.e., the ‘quasi-propria’, at *Top.* I.5 102a22-30; unlike a normal proprium, a ‘quasi-proprium’ does not apply to all and only the things that the subject term applies to without the restriction of its denotation, but if its denotation is restricted to a particular time or to a particular collection of entities, then this ‘quasi-proprium’ applies to all and only the things that the subject term applies to. As I briefly touched upon above, case (3) in T11 is explained by taking the accidental term, “what is sitting,” to be referring only to Socrates if the denotation of this term is limited to the people in a room where Socrates is the only person sitting (see 103a32-9). The idea behind this example seems to be captured more generally by Aristotle’s account of the ‘quasi-propria’ at *Top.* I.5 102a22-30. Indeed, Aristotle explicitly remarks at *Top.* I.5 102b20-26 that accidents can be ‘quasi-propria’ and to illustrate this, he uses the example of “sitting [*kathēsthai*]” in the same way in which it is used as one of the examples of (3) in T11.

The examples of ‘quasi-propria’ presented at *Top.* I.5 102a22-30 seem to contain examples of particulars (“sleeping,” “on the right-hand side [*ek dexiōn*]” with respect to a particular human) as well as universals (“two-footed,” which applies to all and only humans if our consideration is restricted to the human kind, the horse kind, and the dog kind). I do not use Aristotle’s example of two-footed with respect to humans above because he mentions

In short, there are three take-aways from this passage that pertain to al-Fārābī's account of unity in number. First, "one" and "the same" are closely associated or perhaps they even have the same meaning in some contexts, particularly, in the context of the same in number. Also, if not all, then some sub-cases of the same in number seem to be applicable to universals as well as to particulars. Finally, to put it somewhat vaguely for now, the cases of the (one and) the same in number discussed in *Top.* I.7 involve a reference to one thing, particular or universal, under the consideration of its being denoted by two different expressions. As I will try to explain below, these aspects of Aristotle's discussion of the same in number in *Top.* I.7 seem to inform al-Fārābī's articulation of his general idea of the one (and the same) in number which grounds all the senses of unity used in many-place contexts reviewed above.

In his *Kitāb al-Jadal (Book of Dialectics)*, al-Fārābī comments on this account of the ways in which "the same" is said. Al-Fārābī's account derives from Aristotle's account but it is not just a close paraphrase. Al-Fārābī presents his rendering of *Top.* I.7 as the presentation of the ways in which "one and the same [*al-wāḥid bi- 'aynihi*]" is said. His discussion of the subcases of the one and the same in number is clearly based on Aristotle's discussion in T11 above:

T12 *Book of Dialectics* v.3 p.89

... الواحد بعينه في العدد، وهذا على أنحاء: أحدها الشيء المدلول عليه باسمين مترادفين مثل الإزار والرداء، فإن المدلول عليه بالإزار والمدلول عليه بالرداء واحد بعينه. والثاني الشيء المدلول عليه بالحد والاسم أو القول الذي يبذل الحد مكانه، مثل الإنسان والحي الناطق، فإن المدلول عليه بهما واحد بعينه. والثالث مثل عرضين يقالان على شيء واحد، فإنهما يدلان على واحد بعينه في العدد، وذلك أن الموجود له أحدهما هو بعينه الذي يوجد له الآخر. والرابع مثل النوع والعرض إذا قيل على شيء واحد، فإن الشيء المقول عليه النوع هو بعينه المقول عليه العرض.

... what is one and the same in number is [said] in [several] ways, one of which is the thing which is denoted [1.a] by two synonymous names, e.g., 'mantle' [*izār*] and 'cloak' [*ridā*],³⁹⁹ for what is denoted by 'mantle' and what is denoted by 'cloak' are one and the same. The second is the thing which is denoted [1.b] by a definition and a name or [2*] a

"two-footed land animal" as the definition of humans in T11 (also a bit earlier at *Top.* I.4 101b29-34) which makes it seem that two-footed is part of the differentia of humans and hence should be essentially predicated of humans while I want to give an example of an accident here.

More on the classification of the propria in terms of whether it holds at a time (*pote*) and in relation to another thing (*pros heteron*) or always (*aei*) and in respect of itself (*kath' hauto*), see *Top.* V.1.

³⁹⁹ In al-Dimashqī's translation of T11 quoted in Footnote n.393 above, "*himation*" and "*lōpion*" are translated into Arabic as "*thawb*" and "*ridā*."

formula which the definition can replace, e.g., ‘human’ and ‘rational animal [*al-ḥayy*’⁴⁰⁰ *al-nāṭiq*],’ for what is denoted by both is one and the same. [3*] The third is like two accidents which are said of one thing, for they both denote [what is] one and the same in number, that is, that to which one of the two [accidents] belongs is the same as that to which the other [accident] belongs. And [3**] the fourth is like a species and an accident when they both are said of one thing, for the thing of which the species is said is the same as that of which the accident is said.

To make the comparison with the underlying passage from Aristotle easier, i.e., T11 above, I numbered the cases discussed in T12 such that (1.a) and (1.b) in al-Fārābī are the same as (1.a) and (1.b) in Aristotle, while (2*), (3*), and (3**) in al-Fārābī are associated with (2) and (3) in Aristotle respectively. As just stated, al-Fārābī follows Aristotle’s cases (1.a) and (1.b) of the same in number, namely, that, e.g., mantle is the same as cloak, and that human and rational animal are the same. What sort of a formula (*qawl*; *logos* in Greek) al-Fārābī has in mind in (2*) is not clear at first sight, but al-Fārābī’s discussion of the formulae that can replace a definition or that can be replaced by a definition a few pages prior in his *Book of Dialectics* makes it very likely that al-Fārābī has in mind three things here: first, a formula which is used as the name of something which does not have a name as a simple expression, e.g., “the straight line [*al-ḥaṭṭ al-mustaqīm*];” second, the totality of the definitions of the parts of the definition of the thing at issue, e.g., instead of “rational animal [*al-ḥayawān al-nāṭiq*],” we can use the definition of “rational” and the definition of “animal” together: namely, “a substance which is ensouled [*mutanaffīs*], perceptive [*ḥassās*], and has a power by which it can acquire the sciences and the arts and by which it can distinguish between the fine [*jamīl*] and the base [*qabīḥ*] in actions;” and finally, a description (*rasm*) (v.3 p.85-6). A description is a formula which is coextensive with the subject that it is the description of, just like the definition, but unlike the definition which denotes

⁴⁰⁰ Talking about the difference between a proposition/premise (*protasis* - *muqaddima*) and a problem (*problēma* - *mas’ala*, *maṭlūb*) in the *Book of Dialectics*, al-Fārābī quotes *Top.* I.4 101b28-37 (with small changes), and in this quote “ḥayy” is used to translate “zōon” in the sense of animal as the genus of human (*al-Manṭiq ‘inda al-Fārābī*, v.3 p.64). The Arabic translation of *Top.* I.4 101b28-37 that al-Fārābī quotes is from al-Dimashqī’s translation (*Manṭiq Aristū*, p.494 lines 6-13). DiPasquale’s English translation of the *Book of Dialectics* brought to my attention that this is a direct quote from the *Topics* (although, I would add, with small differences) (*Alfarabi’s Book of Dialectic*, 68). “Ḥayy” is also used in the sense of animal by some Arabic philosophers before al-Fārābī: see Footnote n.366 above for al-Kindī’s use of *ḥayy* in the sense of animal. In *KH* 36, al-Fārābī observes that “ḥayy” is sometimes used in the sense of “ḥayawān” as the genus of human, but a cursory search that I undertook suggests that al-Fārābī himself uses “ḥayawān” for animal throughout *KH*. Also, in other places in his *Book of Dialectics*, al-Fārābī uses “ḥayawān” in the sense of animal (e.g., v.3 p.68 lines 11-2, p.86 line 2).

its subject essentially,⁴⁰¹ the description denotes its subject non-essentially, like “risible animal [al-ḥayawān al-ḍaḥḥāk].”⁴⁰²

⁴⁰¹ I want to add a brief remark on what I mean by “essentially” here. The discussion of the different senses in which “essentially” or “substantially” were understood by ancient Greek and medieval Arabic philosophers would take me too far from the immediate concern of this chapter. Al-Fārābī’s ultimate source for the distinction between the essential and the non-essential here is the corresponding distinction in the *Top.* I.4-6, 8 account of the genus (and the differentia along with it), the definition, the proprium, and the accident; according to this distinction, the genus and the definition denote their subjects essentially while the proprium and the accident denote their subjects non-essentially. Al-Fārābī’s interpretation of the *Top.* I.4-6, 8 account of these general terms in the *Book of Dialectics* was influenced by the *Isagoge* reworking of it and the late Greek antique commentaries on the *Isagoge* or the summaries or paraphrases of the material from these commentaries on the *Isagoge* or from commentaries on the works in the *Organon* in later introduction to philosophy or introduction to logic discourses (a good early medieval witness to this tradition in Greek is John of Damascus’ *Dialectica*). The Arabic tradition was influenced by such introduction to philosophy or introduction to logic accounts also in Syriac, perhaps even to a greater degree than the Greek works: for early examples of such texts in the Arabic tradition, see Ibn al-Muqaffā’s *al-Manṭiq* and Ibn Bahrīz’s *Ḥudūd al-Manṭiq*). The reader’s broad understanding of the difference between “rational animal” said of human and “risible animal” said of human in the Aristotelian tradition would be enough for my purpose here.

⁴⁰² The example and the characterization of the *rasm* is from al-Fārābī’s *Isagoge* v.1 p.85-7. Also compare the characterization of the *rasm* in al-Fārābī’s short logical introductory works *Introductory Treatise* v.1 p.62, and in *Five Sections* v.1 p.72-3.

The same idea is also in the *Book of Dialectics*, but the edition of this work that I use by default (in *al-Manṭiq* ‘inda al-Fārābī) makes it harder to see this. That the *rasm* is coextensive with its subject, like the definition, is clearly put in the *Book of Dialectics* (v.3 p.86). On the same page, al-Fārābī says that the *proprium* (*khāṣṣa*) is coextensive with the subject but does not denote it essentially. Al-Fārābī says that a *proprium* could be a formula (*qawl*) or a simple expression (*lafẓa mufrada*). Then right after this, at line 15, the editor of the *Book of Dialectics* in *al-Manṭiq* ‘inda al-Fārābī (namely, Rafīq al-‘Ajam) prints وإن كان لفظة سمّي خاصة. According to the apparatus, this is the reading found in MS. Bratislava 231 (which has the siglum ب in this edition), with وإن كان لفظة being put in the margin of this ms. However, this passage as it is printed in this edition leaves the reader in suspense as to what a *proprium* is called if it is a *qawl*. In fact, the other ms. consulted by the editor, MS. Istanbul Hamidiye 812 (with the siglum ح in this edition), seems to respond to this concern but does so incompletely (as reported in the apparatus, it has instead وإذا (كان قولاً خص باسم الرسم وسمّي خاصته). The edited text should account for both readings and also take into consideration the fact that right before this passage al-Fārābī said that a *khāṣṣa* can be a *qawl* or a *lafẓa mufrada* so that it is more natural to expect him to say something about both cases rather than saying something about only one case leaving the other without a remark. So it stands to reason to posit that the archetype had something along the lines of وإذا كان (كان قولاً خص باسم الرسم وإن كان لفظة سمّي خاصة where in contrast with *qawl*, *lafẓa* means *lafẓa mufrada*. It appears that the eye of the copyist of ms. ب or its ancestor jumped from وإن كان to the similar looking وإن (perhaps it was وإذا at the beginning of both clauses or وإن at the beginning of both of them: if the second *alif* in إذا is written continuous with the *dhāl* and shorter than usual, the combination would look very much like ون; or ن could be corrupted into ذا in the reverse direction). It also seems that the eye of the copyist of ms. ح or its ancestor skipped over the وإن كان لفظة based on its similarity to قولاً as if it was assumed to have been copied already (the similarity would be stronger if both clauses started with وإذا or وإن). Moḥammad Taqī Dāneshpazhuh’s edition does not have a critical apparatus, but it seems that he also follows a similar reasoning when he prints وإن كان لفظة (إن كان قولاً خص باسم الرسم, وإن كان لفظة مفردة سمّي خاصة (*Al-Manṭiqiyyāt li-l-Fārābī* (*The Logical Works of al-Fārābī*), ed. Moḥammad Taqī Dāneshpazhuh, 3 vols. (Qom: Maktabat Āyat Allāh al-‘Uẓmā al-Mar‘ashī al-Najafī, 1987), v.1 p.433 lines 2-3).

I could not consult the Arabic edition by Dominique Mallet that DiPasquale uses in his translation. This edition can be found in Mallet’s dissertation, “La dialectique dans la philosophie d’Abū Naṣr al-Fārābī” (Université Michel-de-Montaigne (Bordeaux 3), 1992). I could not use Mallet’s edition because I do not have access to it, but it appears from DiPasquale’s translation that Mallet’s edition also has something very similar to my and Dāneshpazhuh’s Arabic texts as it can be seen in DiPasquale’s translation: “If it is a speech, it is specifically [known] by the name ‘description,’ and if it is a <single> word it is named ‘property’” (*Alfarabi’s Book of Dialectic*, 93). In fact, the text I prefer along with Dāneshpazhuh and Mallet is corroborated by al-Fārābī a few pages below where al-Fārābī says وذلك أنه حصر الخاصة والرسم في اسم واحد وسمّاها كلها خاصة (“For he [sc. Aristotle] brought the proprium and the description

In order to see how al-Fārābī's (2*) relates to Aristotle's (2), it is useful to take a step back and identify the considerations according to which Aristotle articulates his senses of (the one and) the same in number in a specific order so that we can also see how these considerations still inform al-Fārābī's account of the one and the same in number despite its differences from Aristotle's account.

In the chapters surrounding the chapter on the same, namely chapters 4-6 and 8 of *Top.* I, Aristotle discusses the types of predicates which are used in dialectical problems and propositions.⁴⁰³ Aristotle presents four types: the genus,⁴⁰⁴ the definition, the proprium, and the accident. In chapter 8, Aristotle organizes these four according to two questions: the first question is whether the predicate at issue denotes all and only the things which are denoted by the subject term, i.e., whether the predicate and the subject are coextensive. The second question is whether the predicate at issue belongs essentially to the subject (or the things denoted by the subject term). Positive and negative answers to these two questions yield four categories each of which is to be filled by one and only one of the definition, the genus, the proprium, and the accident. Of the predicates which do not convert with their subjects, if it belongs to its subject essentially, it is a genus, but if it belongs to its subject non-essentially, it is an accident. Genus does not convert with its subject because a genus normally is the genus of more than one species; for example, animal is the genus of human beings, but animal belongs to humans as well as to horses. So, if we take human as our subject, its genus, animal, does not convert with it. Also, accident does not convert with its subject because an accident of a kind does not belong to all members of that kind and it also belongs to other things in other kinds. For example, brown is an accident of horses because not all horses are brown and also some, e.g., bears are brown. So if

together under a single term [*ism*] and he called all of them 'proprium'") (*al-Manṭiq 'inda al-Fārābī* v.3 p.91 lines 5-6). Finally, al-Fārābī says towards the end of his *Isagoge* commentary / paraphrase that "in his *Topics* Aristotle calls descriptions [*al-rusūm*] 'propria [*khawāṣṣ*]'") (*al-Manṭiq 'inda al-Fārābī* v.1 p.86 lines 18-9). Douglas Morton Dunlop points out in his edition and translation of al-Fārābī's *Isagoge* commentary / paraphrase that he could not locate this passage in the *Topics* ("Al-Fārābī's *Eisagoge*," ed. and trans. Douglas Morton Dunlop, *Islamic Quarterly* 3, no. 2 (1956): 117–38, 137 n.4). I could not find it either. It is likely that al-Fārābī's claim was not meant as a direct reference to a passage in the *Topics* but it reflects how al-Fārābī (or his source) understands the *Topics* as represented in the passages summarized above from al-Fārābī's works.

In short, as in the other short logical works mentioned above, also in the *Book of Dialectics*, a *rasm* is characterized as a *qawl* which, similar to a definition, is coextensive with its subject, but, unlike a definition, does not denote it essentially.

⁴⁰³ It is not essential for the purpose of this chapter to give a clearer answer to the question of whether Aristotle classifies here types of expressions (in terms of their meaning) or types of predication.

⁴⁰⁴ The differentia is to be considered along with the genus: see *Top.* I.4 101b18-9 and *Top.* I.8 103b14-6.

we take horse as our subject, its accident, brown, does not convert with it. On the other hand, of the predicates which convert with their subjects, if it belongs to its subject essentially, it is a definition, but if it belongs to its subject non-essentially, it is a proprium (*Top.* I.8 103b6-19).⁴⁰⁵

These two questions guide Aristotle's order of the subcases of the same in number in T11 above, at least, according to their primary uses. Recall that in all these subcases of the same in number, one of the two expressions conveying sameness is the name of the thing which is said to be the same in number under two aspects. Each of the subcases (1.a), (1.b), (2), and (3) are distinguished according to the other expression used to convey the sameness in number of this thing. Also, although this thing seems to be *primarily* a universal at least in subcases (1.b) and (2), as I explained above in Footnotes n.396, 397, and 398, it appears that in most, if not in all, cases this thing could be a particular or a universal. In (1.a) of Aristotle's T11, we have another name for this thing. Aristotle's example of (1.a) is "cloak" and "mantle," which is Aristotle's common example of two terms with the same meaning or the same *logos*, i.e., definition (this situation is occasionally called "synonymy" by Aristotle but it is regularly called "polyonymy" in the commentary tradition).⁴⁰⁶ So in (1.a), we do not deal with any two terms that just happened to

⁴⁰⁵ How this summary account in *Top.* I.8 fits to the earlier characterization of the genus, the definition, the proprium, and the accident in *Top.* I.4-6 is not my concern here. In particular, Aristotle provides a positive and a negative account of the accident at *Top.* I.5 102b4-14; how the positive account should be reconciled with the negative account and hence with the accounts of the genus, the definition, and the proprium in the *Top.* I passages under consideration presents a problem for the coherence of Aristotle's account of the accident. For an extensive discussion of this issue with other related passages, see Theodor Ebert, "Aristotelian Accidents," *Oxford Studies in Ancient Philosophy* 16 (1998): 133–59.

⁴⁰⁶ Aristotle mentions "*himation*" and "*lōpion*" once before as an example of the same in number in *Top.* I.7, namely at 103a10, and there he says that the case of the same in number illustrated by "*himation*" and "*lōpion*" involves many names (*onomata*) but one thing (*pragma*). Aristotle seems to be using these two words as an example of one *pragma* with two *onomata* later at *Top.* VI.11 149a10 too, but also in that passage Aristotle does not explicitly state that we do not deal with two words that happen to pick out the same thing, but rather we deal with two words with the same meaning or which denote according to the same *logos*. This idea is explicitly put and "*himation*" and "*lōpion*" are given as an example of this idea at *Phys.* I.2 185b19-20, *Phys.* III.3 202b12-13, *Met.* Γ.4 1006b25-7, and apparently also *SE* 6 168a28-33. Although Aristotle normally calls things which are denoted by the same name in the same sense or according to the same *logos* "synonymous [*sunōnuma*]" (e.g., at *Cat.* 1a6-12), Aristotle occasionally calls two names with the same meaning or *logos* like "*himation*" and "*lōpion*" synonymous as well (similar to the use of "synonymous" in English). For example, "*sunōnuma*" is used in this sense at *Met.* Γ.4 1006b15-8 (counterfactually, "musical," "white," and "human" would be *sunōnuma* if they had the same meaning) and also it seems to be used in this sense at *SE* 5 167a23-5; in addition to this *SE* passage, the *Index Aristotelicus* 734b mentions *Top.* VIII.13 162b38 and *Rhet.* III.2 1405a1 as examples of the use of "*sunōnuma*" in the sense of two words with the same meaning (Hermann Bonitz, ed., *Index Aristotelicus* (Berlin: G. Reimer, 1870)). In addition to "*himation*" and "*lōpion*," "*oinos*" and "*methu*" are given as an example of synonymous words in this sense at *Phys.* I.2 185b9 and "*poreuesthai*" and "*badizein*" at *Rhet.* III.2 1405a1.

The commentators call this situation polyonymy, presumably to distinguish it clearly from the sense of the term "*sunōnumos*" which is more common in Aristotle, in which case we have a single name used in the same sense or according to the same *logos* to denote two things. Already Alexander uses the terms "polyonymy [*poluōnumia*]" or

denote the same thing; rather, we deal with two terms with the same meaning or the same *logos*. Moreover, these two terms are the *names* of this thing. Since these are the *names* of this thing, the *logos* according to which they denote this thing must be the definition of this thing. In other words, in (1.a), the second name denotes the thing essentially as the first one.⁴⁰⁷ In (1.b.), we have the definition of the thing as the second expression conveying the sameness in number of this thing. Like the name of the thing which is the first expression conveying the sameness in number of this thing, the definition denotes the thing essentially. Next, in (2), we have a proprium. As I pointed out above, according to Aristotle's classification in *Top.* I.8, a proprium denotes the thing non-essentially. But like the previous two cases, a proprium also applies to all the things of which it is the proprium and only to these things; so as in cases (1.a), and (1.b), the proprium of the thing is coextensive with its name without any restriction of its denotation. Finally, in (3), the second expression conveying the sameness in number of this thing is a term derived from an accident of this thing. Since we are still talking about sameness in number here and as Aristotle's explanation of his example of Socrates' being the same in number as what is sitting or what is musical makes it clear, the name of the thing and the term derived from its

"polyonymous [*poluōnumos*]" to express the idea of two words with the same meaning or *logos*: see, for example, his commentary on the *Metaphysics*, 247.27-9. In the late antique commentaries on the *Categories*, polyonymy is normally discussed in commentaries on *Cat.* 1 along with synonymy, homonymy, paronymy, and heteronymy. See, for example, 60.15-33 for the general account, and 69.1-9 in particular on polyonymy in Porphyry's short commentary on the *Categories*.

⁴⁰⁷ As mentioned above, although it is not entirely clear whether Aristotle means his example of "mantle" and "cloak" to be an example of two names of a universal, i.e., a kind of clothing, or he mentions these two as names of particulars, he does not say anything that suggests limiting (1.a) to universals or particulars only. Whether Aristotle would think that the proper names of particulars are rigid designators is an interesting question, but I am not aware of any passage in Aristotle that directly pertains to this issue. In any case, if the Aristotelian position is that the proper names are rigid designators, then a particular thing with two proper names would be *necessarily* denoted by its proper names. For example, "Abū Naṣr," "Muḥammad," and "al-Fārābī" are the proper names of the philosopher whose views I discuss in this chapter (more precisely, these are his *kunya*, *ism*, and *nisba* in that order, and the medieval sources would refer to him often using only his *kunya* or his *nisba*; presumably, his parents called him by his *ism* alone). If it is Aristotelian to say that the proper names are rigid designators, then "Abū Naṣr,"

"Muḥammad," and "al-Fārābī" would *necessarily* refer to the philosopher under consideration. Of course, whether these names would denote this philosopher *essentially* is a further question, and the answer to this question would depend on what more is needed for *essentially* denoting on top of *necessarily* denoting.

Aristotle's discussions of the definability of the particulars as in *Met.* Z.15 I briefly touched upon in Footnote n.396 above might offer some insights on the issue of whether the view that the proper names are rigid designators coheres with Aristotle's relevant views as well as on the issue of whether it is an Aristotelian position to think that the proper names of something denote it *essentially*. Perhaps also relevant in this context is Aristotle's claim in his discussion of the senses of *per se* (*kath' hauto*) in *Met.* Δ.18 that "the essence of each thing is *per se*; e.g., Callias is *per se* Callias and the essence of Callias" (1022a25-7). This passage is not easy to interpret but if the claim is that Callias is *per se* the essence of Callias, the proper name "Callias" seems to pick out the essence of Callias in the relevant way, and since the essence of Callias necessarily holds of Callias, it seems that "Callias" in the relevant way would necessarily denote Callias and hence "Callias" would be a rigid designator.

accident convey the sameness in number of this thing because its name and its accidental term refer to the same thing, though with the denotation of the accidental term being contextually restricted. In other words, what is sitting and Socrates are one in number because if the denotation of “sitting” is restricted to this room and the present moment, it picks out the same thing as what the name “Socrates” picks out, i.e., Socrates. The accidental term clearly does not denote this thing essentially. In this respect, (3) is like (2) but it is unlike (1.a) and (1.b). Also, the accidental term does not denote all and only what the name denotes without any restriction of its denotation. In this respect, (3) is unlike all the other cases. So (3) is farthest removed from (1.a) and (1.b).

In short, as Aristotle puts it clearly in T11, (1.a) and (1.b) have priority over the other cases (these two cases contain what is “most strictly [*kuriōtata*] and primarily [*prōtōs*]” said to be one and the same in number). So, in the core cases, (1.a) and (1.b), the second expression is coextensive with the name of the thing, and it denotes their common subject essentially. Then, in (2), we have the case with a second expression which is still coextensive with the name of the thing but does not denote their common subject essentially. Finally, in (3), we have the case with a second expression which is not even coextensive with the name of the thing *simpliciter*, but only when its denotation is contextually restricted, and it denotes their subject non-essentially.

We observe a similar, although clearly not the same order in al-Fārābī’s T12. As I pointed out above, (1.a) and (1.b) are the same in both Aristotle’s and al-Fārābī’s accounts. As I also pointed out above, al-Fārābī’s (2*) is likely to cover (A.) a *qawl* for the thing which does not have a name (as a simple expression), like “straight line” because a straight line does not have a name in the form of a simple expression, (B.) the totality of the definitions of the parts of the definition of the thing under consideration, and (C.) its description. It seems that unlike in Aristotle, one of the two expressions conveying the sameness in number of something is not assumed to be the name of this thing: at least for (A.), this is not possible because in this case we deal with something which does not have a name, but a *qawl* is used instead of its name. So, in subcase (A.), it seems that the two expressions which convey the sameness in number of the thing are, first, its *qawl* which counts as its name, and second, its definition. Although al-Fārābī does not state this clearly in T12, he does not say anything that counts against taking one of the two expressions to be the definition of the thing, rather than its name, and the other expression to be (B.) the totality of the

definitions of the parts of its definition or (C.) its description. In fact, a bit below in the *Book of Dialectics*, talking about the same in number, al-Fārābī says that “the two things whose subject is common must be either two names, or two formulae, or a name and a formula, or two accidents, or an accident and a species” (v.3 p.90 lines 15-6). It is clear that “two names” corresponds to case (1.a) in T12, “two accidents” to (3*), and “an accident and a species” to (3**). So “two formulae, or a name and a formula” should cover (1.b) and (2*) together. So (2*) covers cases where one thing (primarily a universal) is said to be the same in number because it is considered as denoted by two of the following: its name, its definition, the *qawl* which passes as its name if it does not have a name, the totality of the definitions of the parts of its definition, and its description. Clearly, all these are coextensive, and except for the description, they all denote their subject essentially. So in a way al-Fārābī’s (2*) along with (1.a) and (1.b) are like Aristotle’s (1.a), (1.b), and (2) in that both groups involve simple expressions or formulae which are coextensive, though some denote their subjects essentially but others do not (namely, the proprium in Aristotle and the description in al-Fārābī). But both in al-Fārābī and Aristotle, the primary cases are two names or a name and a definition where we have two expressions which are coextensive and denote their subjects essentially. In Aristotle, with the loosening of one condition, that is, if we do not require that the second expression denotes its subject essentially, we get the proprium. In al-Fārābī, (2*) considers the formulae that replace the definition or are replaced by the definition because they are coextensive with the definition, and the descriptions in particular do not denote the subject essentially like the proprium.

Al-Fārābī’s cases (3*) and (3**) are still connected to Aristotle’s (3), but they come further apart from it. Recall that according to case (3) of Aristotle’s account of the same in number, what the name of something denotes is said to be the same in number as what a term derived from its accident denotes, and to illustrate, Aristotle gives the example of Socrates and the musical (or the sitting), and as explained above, this example is to be understood such that the musical (person) is treated as being the same as Socrates in the context of a place where Socrates is the only musical person. According to al-Fārābī, what is common to all the cases of the one and the same in number is that we deal with something (a particular or a universal) which is denoted by two expressions (or characterized by two properties). So, all the cases of the one and the same in number in al-Fārābī involve two expression which are coextensive simpliciter, or are coextensive when their denotation is contextually restricted as we say that the sitting (person) and the musical

(person) are one and the same in number in the context of a room where only one person is sitting and only this person is a musical person. The fact that we deal with two expressions which are coextensive when at least one of them has its denotation contextually restricted and the fact that at least one of these expressions denotes its subject non-essentially are common to both Aristotle's case (3) and al-Fārābī's cases (3*) and (3**). In (3*) we have two accidents and in (3**) we have an accident and a species.

To repeat, what is common to all the cases of the one and the same in number in al-Fārābī's T12 is the idea that two things are predicated of the same thing, and in reference to this common subject, that of which the first thing is predicated is said to be one and the same in number as that of which the second thing is predicated. This idea seems to have provided al-Fārābī with a spring-board to spell out his general account of the one in number. According to his general idea of the one in number, referring to something considered under its relations to X and Y, we say that what is related to X is one in number as what is related to Y, where this relation is to be understood to include but not limited to the relation of being a subject of as in the cases of the one and the same number in T12 from the *Book of Dialectics*. In fact, the development of al-Fārābī's general idea of the one in number from the idea of the one and the same in number of the *Book of Dialectics* is hard to miss if T12 is read along with the following continuous passage from *KW*. This passage comes right after al-Fārābī's review of the senses of the one in predicate and the one in subject, to which he adds that all these are said to be one because their predicate is one in number or their subject is one in number.⁴⁰⁸ And right after the following quoted passage, al-Fārābī formulates his general account of the one in number, which is quoted as T4 above in section 2. So in the narrative order of *KW*, the following passage is sandwiched between the review of the senses of unity in predicate and in subject, and al-Fārābī's formulation of his general idea of unity in number.

T13 *KW* 6, 7 = 43.7-44.4

فينبغي الآن أن نقول ما الواحد بالعدد، فإنه هو الذي لأجل الإضافة إليه قيل في الأشياء الكثيرة إنها واحد. فأحرى ما قيل فيه إنه واحد بالعدد ما كان مسمى باسمين، فإن المسمى بهذا والمسمى بذلك الاسم⁴⁰⁹ واحد بعينه سواء كان ذلك

⁴⁰⁸ As I argued in Footnote n.328 in Section 1 above, we should keep Mahdi's addition of وإما إذا كان موضوعهما واحداً to the end of *KW* 5 (41.2-3).

⁴⁰⁹ الاسم is in all three mss. but not in Mahdi; it is correctly restored in the edition by Martini Bonadeo and her team.

شخصاً أو نوعاً. أما الشخص فمثل هذا الإنسان إذا كان يسمى باسمين أو كان له اسم وكنية. وأما النوع فمثل الإزار والرداء فإن المسمى بالإزار هو بعينه المسمى بالرداء⁴¹⁰. وكذلك النوع الذي له اسم وحده أو رسم، فإن المدلول عليه بالاسم هو بعينه المدلول عليه بالقول، سواء كان حداً أو رسماً.

ثم الشيء الذي يوصف بعرضين إن كان الموصوف بأحدهما هو الموصوف بالآخر، فهو بعينه واحد بالعدد. وكذلك الموصوف بجنس وعرض، مثل الإنسان يوصف بأنه حيوان وأنه ذو رجلين، فالموصوف بهما واحد بعينه بالعدد، وكذلك الموصوف بنوع وعرض، مثل زيد هو إنسان وهو أبيض، فالموصوف بالإنسان والموصوف بالأبيض واحد بعينه في العدد.

So now we must talk about what the one in number is, for it is that on account of a relation [*iḍāfa*] to which several things were said to be one [above]. So [I.] the most proper of what is said to be one in number is what is named by two names, for that which is named by this and that which is named by that name is one and the same, regardless of whether that is an individual or a species. As for the individual, it is like this human if he is named by two names, or has a name and a *kunya*. As for the species, it is like mantle and cloak [*al-izār wa-l-ridā*] for that which is named by ‘mantle’ is the same as that which is named by ‘cloak’. [II.] Likewise, [as for] the species which has a name, and a definition or a description, that which is denoted by the name is the same as that which is denoted by the formula, regardless of whether it [sc., the formula] is a definition or a description.

Next, [III.] [as for] something characterized [*yūṣafu*] by two accidents, if that which is characterized by one of [the two accidents] is that which is characterized by the other, it is the same and one in number. Likewise, [IV.] [as for] that which is characterized by a genus and an accident, just as human is characterized as being animal and as being two-footed, that which is characterized by them both is one and the same in number.

Likewise, [V.] [as for] that which is characterized by a species and an accident, just as Zayd is a human and he is white, that which is characterized by human and that which is characterized by white is one and the same in number.⁴¹¹

⁴¹⁰ *الرداء* is in all three mss. but not in Mahdi; this clause is correctly restored in the edition by Martini Bonadeo and her team. (For the sake of completeness, I should add that MS. A has *رداء* instead of *الرداء* in MS. B and MS. C, but there is little doubt that *رداء* is a mistake for *الرداء*.)

⁴¹¹ This passage and the following paragraph in *KW* (namely *KW* 8 = 44.4-45.10, whose beginning is quoted above as T4) constitute al-Fārābī's discussion of the senses of unity in number for the first time in *KW* which is in Part 1 of

I divided this passage into parts marked by Roman numerals to make the comparison between this passage and al-Fārābī's account of the cases of the one and the same in number in the *Book of Dialectics* easier. (I.) is a close parallel to Aristotle's and al-Fārābī's (1.a), with the difference that here al-Fārābī explicitly distinguishes between the cases where the thing which is said to be one in number is an individual and where it is a kind. If an individual thing has two names, or in particular if an individual *person* has a name and a *kunya* (strictly a teknonym (i.e., a name for a parent after their child) and more broadly also a nickname), what is denoted by one name and what is denoted by the other name or the *kunya* are one and the same. For the kind, al-Fārābī gives the common example of the type of clothing called "mantle" or "cloak."

(II.) partially overlaps with al-Fārābī's (1.b) and (2*) in T12 above which comprise the cases of the one and the same in number where the sameness in number of the thing under consideration is conveyed by the name of the thing, or its definition, or the totality of the definitions of the parts of its definition, or a *qawl* which stands for its name if it does not have a name as a simple expression, or a description. In (II.), al-Fārābī specifically addresses the case where in reference to a kind which has a name, and a definition or a description, it is said that what is denoted by the name is one and the same in number as what is denoted by the definition or the description.

The cases (III.), (IV.), and (V.) correspond to al-Fārābī's (3*) and (3**) in T12 which comprises the cases of the one and the same in number where the expressions conveying sameness are two accidents in (3*) or an accident and a species in (3**). Recall that (3*) and (3**) diverge from Aristotle's (3) in *Top.* I.7, but they still depend on the idea that al-Fārābī identifies as the general idea behind all the cases of the one and the same in number, namely, that something, a particular or a universal, is the subject of two expressions (or the subject of the real features that these expressions express) either simpliciter or as the denotation of these expressions are restricted contextually, and it is said in reference to this thing that what is denoted by one expression is one and the same in number as what is denoted by the other expression. Accordingly, (III.) has two accidents as in (3*), and (V.) has an accident and a species as in (3**). (IV.) is a variation on the same theme: as the example makes it clear, it is said in reference to a kind (e.g., human) that what is denoted by its genus (animal) is one and the same in number as what is denoted by its

KW. He summarizes the senses of unity in number later in *KW* 89 = 77.1-8 and *KW* 92 = 78.5-12. These later summaries do not diverge from the discussion of the senses of unity in Part 1 of *KW* quoted above as T13 and T4.

accident (two-footed). (IV.) seems to be similar to (III.) and (V.) in that in all these three cases, the two expressions at issue are not coextensive *simply* but they are coextensive as the denotations of these expressions are *contextually restricted*. According to Aristotle's classification of the genus, the definition, the proprium, and the accident in *Top* I.8 summarized above, an accident is not coextensive with its subject (in particular, see 103b12-19) and the subject here in (IV.) is human (animal and two-footed are said of human). Moreover, Aristotle says at *Top*. I.5 102a24-28 that two-footed is a *pros ti* proprium of human, that is to say, all humans are two-footed, but there are also other animals which are two-footed; still, in the context where humans are compared with dogs and horses, "two-footed" is said of all and only humans.⁴¹² So when we say animal and two-footed are one in number because they characterize the same thing, human, we must understand the denotation of "animal" and "two-footed" to be contextually restricted to humans, for example, in the context where humans are compared with dogs and horses.

To repeat, the idea that underlies all the cases of the one and the same in number is that the subject of two things are said to be one and the same in number when it is considered as the subject of these two things. Calling the subject of two things one in number insofar as it is the common subject of both provides a sense of unity that perfectly complements the cases of the one in subject in al-Fārābī where "subject" is understood as the subject of predication. To use al-Fārābī's example, human and white are said to be one in subject because they both are predicated of Zayd. In turn, it is said in reference to Zayd that what is characterized by human and what is characterized by white (in this context) is one and the same in number.⁴¹³ This idea seems to have provided an important stepping-stone for al-Fārābī to articulate his general idea of unity in number which complements *all* the senses of unity used in many-place contexts. If the account of the one in number is not limited to what is the subject of two things in the sense of the subject of predicate as in *Top*. I.7 and in al-Fārābī's interpretation of it, but is extended to include also the subject of change, i.e., matter, the one in number can work well as a sense of unity that complements the full range of al-Fārābī's senses of unity in subject. Moreover, if it is further extended to include what is the predicate of two things, the one in number can also work well as

⁴¹² As I mentioned in Footnote n.398, a "*pros ti*" proprium should not be confused with a proper proprium; a proper proprium is coextensive with what it is the proprium of without any restriction of its denotation.

⁴¹³ See *KW* 5, and also Footnote n.327 in Section 1 which comments on *KW* 5, and more generally, on the subcases of the one in subject (of predication) in *KW*.

a sense of unity that complements the one in predicate. And if the relevant relation is not limited to being a subject of two things or being the predicate of two things, but if it comprises being related to two things in any relevant way, the one in number can work well as the sense of unity that complements any sense of unity used in many-place contexts, including the one *qua* continuous and the one *qua* a totality. So if we understand the one in number so that it is said in reference to Z which is related to X and Y that what is related to X and what is related to Y is one in number, we would have a general sense of unity that complements all the senses of unity used in many-place contexts whose characteristics were specified in the first section.

Conclusion

This chapter explains one of the major differences between al-Fārābī's discussion of unity and multiplicity in his *KW* and Aristotle's corresponding discussion in the *Metaphysics*, namely, al-Fārābī's account of unity in number. I tried to show that al-Fārābī articulates his sense of unity with a view to ground all the senses of unity used in many-place contexts and al-Fārābī's direct source for articulating his sense of unity in number is not to be found in the *Metaphysics* but in Aristotle's discussion of the same in number in *Topics* I.7. In the first section, I reviewed al-Fārābī's discussion of the senses of unity used in many-place contexts. In the second section, I presented the features that al-Fārābī assigns to his sense of unity in number so that it can ground all the senses of unity used in many-place contexts. In the third section, I reviewed an account that divides the senses of unity into the one in number, in species, in genus and sometimes also by analogy that was common in Aristotle and the Greek and Arabic Aristotelian tradition before al-Fārābī and I explained that al-Fārābī's discussion of the relevant senses of unity, including unity in number, in *KW* is different from this account. In the third and the fourth sections, I tried to show that al-Fārābī's direct source for developing his sense of unity in number is not Aristotle's discussion and employment of the one in number in the *Metaphysics*, but rather, Aristotle's discussion of the same in number in *Topics* I.7. It became clear that even though al-Fārābī starts from Aristotle in articulating his account of unity in number (especially from *Top.* I.7), his account of unity in number is quite different from Aristotle's account. As argued above, al-Fārābī's main motivation for developing his sense of unity in number differently from Aristotle seems to lie in al-Fārābī's interest in distinguishing the senses of unity used in one-

place contexts from the senses of unity used in many-place contexts and his interest in providing an analysis of the conceptual structure of the senses of unity used in many-place contexts.

Appendix: *Met. Δ.6* in al-Kindī's *On First Philosophy*

Except for a few fragments, only the first part (*juz* ') of al-Kindī's *On First Philosophy* (*Fī al-Falsafa al-Ūlā*) is extant. This part is divided into four chapters (*fann*). To put it extremely briefly, in Chapter 3 al-Kindī presents a major argument with several sub-arguments for the existence of God, i.e. the True One (*al-wāḥid al-ḥaqq*). This argument can be sketched out as follows: everything other than God is both one and many; so they have their unity accidentally; so they receive their unity from something else; this cannot go on indefinitely or in circles; so there must be something which is essentially one and is the ultimate provider of the unity of the other things; this is the True One, i.e., God. In Chapter 4 al-Kindī reviews the ways in which things are said to be one and he aims to be exhaustive in this review; he argues that none of these senses of unity applies to God. In other words, the unity of the True One is not like the unity we observe in anything else in reality that we know, be it a sensible thing or an intelligible thing. After reviewing several senses of unity and arguing that they do not apply to God, al-Kindī presents his take on *Met. Δ.6* which is in part a summary, in part a paraphrase, and in part a creative interpretation (93.4-95.1). Even though how all the senses of unity reviewed above in Chapter 4 relate to the senses of unity al-Kindī discusses in his account of *Met. Δ.6* is not entirely clear, he presents his account of *Met. Δ.6* as concluding the prior review of the senses of unity and he seems to take his rendering of *Met. Δ.6* to be a general account of the senses of unity that subsume all the senses of unity reviewed above. He begins his account of *Met. Δ.6* by saying, "it became clear from what we said [so far] that the one is said either *per se* [*bi-l-dhāt*] or *per accidens* [*bi-l-'araḍ*]" (93.4-5). Recall that Aristotle's general division of the senses of unity in *Met. Δ.6* seems to be into the one *per accidens* and the one *per se*. Then al-Kindī presents a brief discussion of the one *per accidens* (93.5-8): even though this clearly preserves the basic idea of Aristotle's account of the one *per accidens* (1015b16-34), it is not simply a paraphrase of it. More importantly for our current purpose, after this, at line 8, al-Kindī starts to discuss the senses of the one *per se* according to his rendering of *Met. Δ.6* and he asserts that these senses of the

one *per se* subsume all the senses of unity reviewed above in chapter 4 other than those that can be subsumed under the one *per accidens*:

T1 *On First Philosophy*, 93.8-16

وأما بالذات فبإقالي ما يقال عليه الواحد مما ذكرنا أنه يقال واحد وهي جميعا ما جوهرها واحد، وتنقسم بقسمة أولى إما بالاتصال وهو من حيّز العنصر، وإما بالصورة وهو من حيّز النوع، وإما بالاسم وهو من حيّز هما جميعا، وإما بالجنس وهو من حيّز الأول.

فالواحد بالاتصال هو الواحد بالعنصر أو بالرباط وهو الذي يقال له واحد بالعدد [أو بالشكل]⁴¹⁴، والواحد بالصورة هي التي حدّها واحد، والواحد بالجنس هي التي [حد] <شكل>⁴¹⁵ محمولها واحد، والتي بالاسم أعني بها ما هي بالمساواة واحد والواحد بالمساواة هي التي نسبتها واحد، كالأشياء الطبية المنسوبة جميعا إلى الطب

[1] As for [the one] *per se*, it [comprehends] the rest of that of which the one is said among what we mentioned to be said to be one, [2] and these all are things whose substance [jawharuhā] is one, and they are divided primarily [as follows]: [2.a] either [the one] by continuity [bi-l-ittiṣāl], which is in the domain [hayyiz] of the matter [‘unṣur], [2.b] or [the one] by ṣūra,⁴¹⁶ which is in the domain of the form [naw’],⁴¹⁷ [2.c]

⁴¹⁴ See the next footnote.

⁴¹⁵ The edition of *On First Philosophy* I use, following the ms., prints here حد and at the line above marked with the previous footnote it prints, following the ms., بالشكل. As I explain below, أو بالشكل does not make sense there given Aristotle’s text in the background and شكل instead of حد makes much better sense here given Aristotle’s text in the background. My proposal is that at some point in the transmission history of al-Kindī’s text a copyist wrote حد instead of شكل, maybe under the influence of a similar formulation right before (هي التي حدّها واحد) and perhaps contributing to this mistake was the fact that شكل was written without the diacritics and the upper reverse inclined line of the kāf in the middle position was left out (as that line would often be added afterwards, like the diacritics, by interrupting the flow of the pen on the paper); then a corrector compared this copy with a ms. that had the correct reading and realized that the correct reading is شكل, not حد; then, this corrector wrote شكل right above حد and this aligned more or less with the gap between واحد بالعدد and الواحد بالصورة in the line above. So the next copyist thought the line above read شكل له واحد بالعدد شكل; since this is blatantly ungrammatical, this copyist thought this was a mistake for بالشكل. I propose that this is in outline how we got the reading that we have in our single ms.

⁴¹⁶ As we will see below, *Met.* Δ.6 1016b6-9 and 1016b31-5 are behind this passage in *On First Philosophy* and in both passages from *Met.* Δ.6 Uṣṭāth translates instances of *eidos* as ṣūra while in the second passage from *Met.* Δ.6 it is clear that by *eidos* Aristotle means species, not form. The translation of *eidos* as ṣūra when it means form and its translation as naw’ when it means species is a feature of the mature Arabic philosophical terminology but in early Arabic philosophical writings this practice was not fixed. For example, above in Chapter 3 in *On First Philosophy*, giving an account of Porphyry’s five *phōnai* in the *Isagoge*, al-Kindī calls what is clearly species, ṣūra (45.12-15). Besides, in the passage under consideration in T1, al-Kindī claims that the one bi-l-ṣūra is in the domain of al-naw’ but since naw’ here is clearly contrasted with matter (‘unṣur), this naw’ should mean form, not species. In any case, I leave all instances of ṣūra in this passage untranslated: in doing so, my purpose is to convey that al-Kindī follows Uṣṭāth in calling ṣūra what Aristotle calls *eidos* in the two *Met.* Δ.6 passages which are behind this passage from *On First Philosophy*, without deciding whether they mean form or species. Also, in these contexts, it does not seem to be very important to settle on whether Aristotle or al-Kindī means form or species because if by form we mean the substantial form, for any two individuals, their having the same form is equivalent to their being in the same species.

⁴¹⁷ As I explained in the previous footnote, in contrast with matter (‘unṣur), naw’ should mean form here.

or [the one] in name [*bi-l-ism*], which is in the domain of both, [2.d] or [the one] in genus, which is in the domain of the first [sc. the matter].

So [3.a] the one by continuity is the one in matter or by being bound [*bi-l-ribāt*], and it is the thing for which ‘one in number’ is said. [3.b] The one by *ṣūra* [is said of those things] whose definition [*ḥadduhā*] is one. [3.d] The one in genus [is said of those things] the figure of whose predicate [*shakl mahmūlihā*] is one. [3.c] [Finally, we have] the things which are one in name, i.e., things which are [one] by analogy [*bi-l-musāwā*]; the one by analogy [is said of those things] whose relation [*nisbatuhā*] is one, e.g., the medical things [*al-ashyā’ al-ṭibbiyya*] which are related as a whole to medicine [*ṭibb*] [e.g., scalpel and healthy food].

I will discuss this interesting passage in detail, but first, I want to make a few general remarks. First, in this passage al-Kindī mashes two different lists of senses of unity in *Met.* Δ.6: T1 (2) starts from 1016b6-9 (the one by continuity (*sunecheia(i)*), in species/by form (*eidei*), and by formula (*logō(i)*)) and modifies it so that it fits to the four senses of unity in T1 (3) more directly taken from 1016b31-5 (the one in number (*kat’ arithmon / arithmō(i)*), in species (*kat’ eidos / eidei*), in genus (*kata genos / genei*), and by analogy (*kat’ analogian / analogia(i)*)). It is not clear from Aristotle’s text how these two sets of senses of unity relate to each other. The second general remark I want to make is that it seems that al-Kindī attempts to make his combination of these two sets of senses of unity subsume almost all the senses of the one discussed in *Met.* Δ.6 other than the one *per accidens*, but it is not entirely clear from Aristotle’s text how either of these two sets of senses of unity could subsume almost all the senses of unity discussed in *Met.* Δ.6 other than the one *per accidens*.⁴¹⁸ Third, as we see clearly in T1 (1), al-Kindī presents his account of the senses of the one *per se* in this passage as subsuming all the senses of unity al-Kindī reviewed above in chapter 4 of *On First Philosophy* (other than those which fall under the one *per accidens*). Although it is not entirely clear how *all* the senses of unity al-Kindī reviewed

⁴¹⁸ Saying that these are not clear does not of course mean that there is no ground in Aristotle for reading these two sets of senses of unity as merging together, or reading these two sets of senses of unity as somehow presenting a general division of the senses of unity which is to subsume almost all the senses of unity other than the one *per accidens* discussed in *Met.* Δ.6, but it is outside of our immediate interest here to discuss all the hints in Aristotle’s text that might be taken to support reading these two sets of senses of unity as merging together or taking them as presenting a general division of the senses of unity. In what follows, I touch on only those details in Aristotle that are relevant to clarifying al-Kindī’s points.

above in chapter 4 of *On First Philosophy* are to be subsumed under the senses of unity distinguished in T1, I am not going to discuss this point since it is outside of our immediate interest here. The final general remark I want to make before getting into a closer analysis of T1 is about what comes after T1 in al-Kindī's account of *Met. Δ.6*: the rest of al-Kindī's account of *Met. Δ.6* (93.17-95.1) is a close paraphrase of the remaining part of *Met. Δ.6*, i.e., 1016b35-7a6. As we will see more extensively below, al-Kindī's T1 (3) derives from *Met. Δ.6* 1016b31-35 which I reproduce as T3 below, and after T1, al-Kindī goes on to paraphrase the rest of *Met. Δ.6* (i.e., 1016b35-7a6).⁴¹⁹

As I said above, T1 (2) starts from 1016b6-9: at 1016b6-9, Aristotle makes a contrast between things which are said to be one because they are somehow related to something which is one, while other things are said to be one “primarily [*prōtōs*]:”

T2 *Met. Δ.6* 1016b8-9, Uṣṭāth's translation in *Long Commentary* 537.4-6

τὰ δὲ πρῶτως λεγόμενα ἐν ὧν ἡ οὐσία μία, μία δὲ ἢ συνεχεία ἢ εἶδει ἢ λόγῳ

On the other hand, the things which are said to be one primarily are those whose substance is one, [and their substance is one] either by continuity [*sunecheia(i)*] or by form [*eidei*], or by formula [*logō(i)*]

والأشياء التي يقال واحد بنوع أول هي التي جوهرها واحد وهو واحد إما بالاتصال وإما بالصورة وإما بالكلمة

I also provide Uṣṭāth's translation of this passage because we are told in the *Fihrist* (Flügel 251.27-8 = Sayyid v.2 171.5-6) that Uṣṭāth produced his translation of the *Metaphysics* for al-Kindī; indeed, we find a *general* (though not universal) agreement between the technical terms used by al-Kindī in T1 and the technical terms used in Uṣṭāth's translation of the passages from the *Metaphysics* that are in the background, reproduced here as T2, and T3 below (as indicated above, T3 = 1016b31-35 (the one in number, in species, in genus, and by analogy) is the immediate source of al-Kindī's account in T1 (3)).⁴²⁰ In T2, Aristotle says that in these cases of

⁴¹⁹ Compare Uṣṭāth's translation of 1016b35-7a6 (545.1-9) to see how close al-Kindī's paraphrase is, perhaps except for the last few lines.

⁴²⁰ Perhaps the only major difference in terminology between al-Kindī and Uṣṭāth's translation of the passages from Aristotle in the background is that in T2 and T3 Uṣṭāth translates *logos* as *kalima*; in T1 (2), corresponding to T2, al-Kindī uses *ism* apparently for *logos* in T2, and in T1 (3), corresponding to T3, al-Kindī uses *hadd* apparently for *logos* in T3. Presumably, this difference, along with the other differences in content between al-Kindī's T1 and Aristotle's T2 and T3, can be explained by the fact that al-Kindī is not simply summarizing or paraphrasing

things which are said to be one primarily, we have things whose substance is one. In T1 (2), al-Kindī says that all the cases of the one *per se* apply to “things whose substance is one, and they are divided primarily [into three].” In T2 Aristotle considers things which are said to be one *primarily*, and he does not say explicitly that these are said to be one *per se*, but al-Kindī’s interpretation does not seem far-fetched. Moreover, even the “primarily [*ūlā*]” in al-Kindī’s phrase “they are divided primarily [*bi-qisma ūlā*] [into three]” might be a remnant of “primarily [*awwal*]” in the expression in T2 “the things which are said to be one primarily [*bi-naw‘ awwal*]”. In T1 (2.a), (2.b), and (2.c), al-Kindī apparently repeats Aristotle’s three cases in T2, namely, the one by continuity, by *eidōs*, and by formula; the one by formula (*logos* = in Uṣṭāṭh: *kalima*) becomes the one by name (*ism*) in al-Kindī (2.c). To these three, al-Kindī adds in (2.d) the one by genus. In the *On First Philosophy* passage under consideration, al-Kindī assimilates the one by continuity from T2 to the one in number taken from T3 (*Met.* Δ.6 1016b31-5 reproduced below) and he assimilates his one by *ism* derived from the one by *logos* = *kalima* in T2 to the one by analogy in T3. With the addition of the one in genus to the three cases of unity derived from T2, al-Kindī obtains four senses of unity from T2 which he merges into the four senses of unity from T3.

In T2, Aristotle lists but does not describe his three senses of unity; by contrast, al-Kindī adds brief descriptions of these three senses of unity in his T1 (2) (and a description of the one in genus which al-Kindī adds to Aristotle’s three); when these descriptions are read along with al-Kindī’s descriptions of the four senses of unity in T1 (3) he draws from T3 and practically equates to these initial four senses of unity in T1 (2), we see al-Kindī’s attempt to subsume almost all the senses of the one *per se* discussed in *Met.* Δ.6 under these four senses of unity. Let me present a short outline of these senses of the one discussed in *Met.* Δ.6 skipping all the difficult interpretive questions about how they should be understood; my aim is just to briefly explain how al-Kindī tries to subsume almost all these senses of the one *per se* discussed in *Met.* Δ.6 under the four senses of the one he presents in T1 (2) and (3). After discussing the one *per accidens* at 1015b16-36, Aristotle starts to discuss the cases of the one *per se* and apparently all the cases of the one discussed until the end of the chapter are the cases of the one *per se*. We

Aristotle’s T2 and T3 but he is merging them into a single set of senses of unity which are apparently meant to subsume almost all the senses of unity *per se* discussed in *Met.* Δ.6 and also subsume all the senses of unity reviewed above in chapter 4 in *On First Philosophy*.

have first (I) the one by continuity (1015b36-6a17), then (II) the case of the one said of things if their subject (*hupokeimenon*) is “undistinguished in kind [*tō(i) eidei... adiaphoron*]” (101617-24), then (III) the one in genus (1016a24-32), and (IV) the one said of things “whose formula stating the essence is not divided with respect to another [formula] which makes the thing clear [*ὅσων ὁ λόγος ὁ τὸ τί ἦν εἶναι λέγων ἀδιαίρετος πρὸς ἄλλον τὸν δηλοῦντα τὸ πρᾶγμα*]” (1016a32-b1). After this, Aristotle appears to generalize the last case (1016b1-3) and then states what appears to be the most general characterization of unity that applies to all or almost all⁴²¹ the senses of unity (1016b3-6). After this comes T2. Then, (I') we have a special case of the one by continuity, namely the one said of things which are not only continuous but also form a whole (*holon*) (1016b11-17). Next, (V) we have the one said of the first measure of a genus (1016b17-31) (see *Met. Iota 1* 1052b3-b8 for a more extensive discussion of this last case). I will refer to these cases of the one discussed in *Met. Δ.6* using these Roman numerals. After (V), we have

T3 *Met. Δ.6* 1016b31-5, Uṣṭāth's translation in *Long Commentary* 544.11-5.1

ἔτι δὲ τὰ μὲν κατ' ἀριθμὸν ἐστὶν ἓν, τὰ δὲ κατ' εἶδος, τὰ δὲ κατὰ γένος, τὰ δὲ κατ' ἀναλογίαν, ἀριθμῷ μὲν ὧν ἡ ὕλη μία, εἶδει δ' ὧν ὁ λόγος εἷς, γένει δ' ὧν τὸ αὐτὸ σχῆμα τῆς κατηγορίας, κατ' ἀναλογίαν δὲ ὅσα ἔχει ὡς ἄλλο πρὸς ἄλλο.

Moreover, some things are one in number [*kat' arithmon*], others in species [*kat' eidos*], others in genus [*kata genos*], and others by analogy [*kat' analogian*]. [Things are one] in number [*arithmō(i)*] if their matter is one, in species [*eidei*] if their formula [*logos*] is one, in genus [*genei*] if they have the same figure of predication [*schēma tēs katēgorias*], and by analogy if they are related as one thing to another.

وأيضا من الأشياء ما هو واحد بالعدد ومنها ما هو واحد بالصورة ومنها واحد بالمساواة ومنها واحد بالجنس فالتى هي واحد بالعدد هي التى عنصرها واحد والتى بالصورة واحد هي التى كلمتها واحدة والتى بالجنس واحد هي التى شكل محمولها واحد والتى بالمساواة واحد هي التى نسبتها واحدة كنسبة الشيء إلى شيء آخر

As I already mentioned above, T3 is the direct source of al-Kindī's four cases of the one in T1 (3) and that al-Kindī practically equates the four cases in T1 (2) developed from T2 with the four cases in T1 (3) derived from T3. Let me briefly comment on how each of these four cases are described by Aristotle in T3, how it is described by al-Kindī in T1 (2) and (3) and which cases of

⁴²¹ More on this, see Section 4 Footnote n.381 above.

the one discussed in *Met.* Δ.6 I outlined above al-Kindī tries to subsume under this case of the one in T1 (2) and (3). First, the one by continuity: it is stated in T1 (2.a) that it is “in the domain [*hayyiz*] of the matter [*‘unṣur*],” and in T1 (3.a) that “the one by continuity is the one in matter or by being bound [*bi-l-ribāʿ*], and it is the thing for which ‘one in number’ is said.” So the one by continuity is identified with the one in number. Moreover, matter plays an important role in its unity; this claim finds support in Aristotle’s characterization of the one in number in T3: “[things are one] in number [*arithmō(i)*] if their matter is one.” When Aristotle lists the different sorts of things that are said to be continuous, and hence one by continuity, at 1015b36-6a17, he also mentions that a bundle (*phakelos*) is continuous by being bound (*desmō(i)*) (1016a1, translated as *ribāʿ* by Uṣṭāth (527.3)). As I indicated above, the ms. and the edition I use have *bi-l-shakl* after *bi-l-‘adad* in T1 (3.a). In other words, if we follow that reading, the one by continuity is said to be “one in number or one in figure [*bi-l-shakl*].” There is nothing obvious in *Met.* Δ.6 that supports calling the one by continuity or the one in number also the one in figure. As we will see shortly, the emendation I propose (deleting the *aw bi-l-shakl* at line 13 and changing the *ḥadd* in the next line into *shakl*) makes perfect sense given Aristotle’s characterization of the one in genus in T3.

So, of the senses of unity discussed in *Met.* Δ.6, al-Kindī’s one by continuity = one in number (2.a)/(3.a) seems to comprehend the one by continuity (I) (with its subcase one *qua* a whole (I’)) and perhaps also the one said of things whose subject (*hupokeimenon*) is not distinguished in *eidos* (II).

Next, we have the one by *ṣūra* (= *eidei*): it is stated in T1 (2.b) that it is “in the domain of the form [*al-naw*]”⁴²² and in T1 (3.b) that it is said of things “whose definition [*ḥadduhā*] is one.” This second characterization of the one by *ṣūra* closely follows the characterization of the one *eidei* as being said of things whose *logos* is one in T3. As indicated above and we will see again shortly, both in T2 and T3, Uṣṭāth renders *logos* as *kalima*: in both passages, *logos* seems to mean definition. So al-Kindī’s rendering of the *logos* in T1 (3.b) as *ḥadd* seems apt. It seems that al-Kindī renders the *logos* in T2 as *ism* in T1 (2.d) because he wants to make the one *bi-l-ism*

⁴²² For the meanings of *ṣūra* and *naw* ‘ in T1, see Footnote n.415 above.

equivalent to the one in analogy in T3 and for this purpose, he must understand the *logos* = *kalima* in T2 not to mean definition but something else.⁴²³

Even though it is not easy to figure out precisely what Aristotle means in his characterization of the case of (IV) the one said of things “whose formula stating the essence [i.e., the definition] is not divided with respect to another [formula] which makes the thing clear” (discussed at 1016a32-b1), since al-Kindī says in T1 (3.b) that things whose definition (*ḥadd* = *logos*) is one is said to be one by *ṣūra* (following Aristotle’s T3), he seems to take this case of the one (IV) to be equivalent to or comprehended by the one by *ṣūra*.

The third sense of the one discussed in T1 by al-Kindī is the one in genus. It is stated in T1 (2.d) that the one in genus “is in the domain of the first [sc. the matter],” and it is stated in T1 (3.d) that the one in genus is said of things if “the figure of their predicate [*shakl maḥmūlihā*] is one.” *Shakl maḥmūl* is precisely how Uṣṭāth translates Aristotle’s *schēma tēs katēgorias* (meaning a category) in his characterization of the one in genus in T3. As I indicated above, the ms. and the edition I use have *ḥadd maḥmūlihā* here; accordingly, al-Kindī’s claim would be that if the definition of the predicates of two things are one (i.e., the same), they are one in genus. But this does not make good sense: a geometrical sphere, being a quantity, is of spherical shape; the moon is of spherical shape. In other words, both this quantity and this substance have the same kind of predicate, sc., the special quality of having a spherical shape. So, their predicate has the same definition; but it does not seem right to say that this quantity and this substance are one in genus. On the other hand, it makes perfectly good sense to say that if two things are under the same “figure of predication,” i.e., category, then they are one in genus, even though I grant that the Arabic translation of “figure of predication” as *shakl maḥmūl* somewhat obscures the fact that Aristotle means a category here. Nonetheless, given Uṣṭāth’s translation of T3 which is the passage al-Kindī closely draws on in T1 (3), I think there is a good reason to emend the *ḥadd maḥmūlihā* we find in the ms. into *shakl maḥmūlihā* and the mistake can be explained in the way I describe in Footnote n.415 above.

⁴²³ It is possible that al-Kindī was motivated to understand the one by *logos* in T2 as the one by *ism* under the influence of the general division of the senses of unity we find in the late antique Greek commentaries on *Phys.* I.2. As I outlined in Section 3 above, in these accounts the one *onomati* seems to mean the one by analogy; if so, taking the one by *logos* in T2 as the one by *ism* would allow al-Kindī to equate this sense of the one with the one by analogy, which is what he in fact does in T1 (3.c).

It is not obvious why al-Kindī implies that the one in genus is in the domain of the matter but it is possible that when he says this, he has in mind Aristotle’s association of the genus with matter or subject, and in particular, Aristotle’s claim at *Met.* Δ.6 1016a24-8 that things which are the same in genus are said to be one even though they differ by the opposite differentiae they have, and these are said to be one “because the genus which is the *subject* [*hupokeimenon*] of [these] differentiae is one” (my emphasis) and the case with the things whose genus is one even though they differ by their differentiae is “indeed in a very similar way [*tropon dē paraplēson*] to the things whose matter [*hulē*] is one.” It is also possible that al-Kindī has in mind other passages in Aristotle, especially in *Met.* Δ.28, where it is said or implied that the genus is in a sense matter or subject for the differentiae or that the genus is closely associated with the matter or the subject.⁴²⁴ In any case, there is little doubt that al-Kindī would think that his unity in genus (2.d/3.d) is equivalent to or comprehends Aristotle’s case (III) of the one in genus but he would perhaps consider also Aristotle’s case (II) of the one said of things whose subject (*hupokeimenon*) is “undistinguished in kind [*tō(i) eidei... adiaphoron*]” together with (III) the one in genus.

Finally, the fourth sense of unity al-Kindī discusses in T1 is the one in name (*bi-l-ism*) which al-Kindī takes to be equivalent to the one by analogy.⁴²⁵ It is stated in T1 (2.c) that the one in name “is in the domain of both [the form and the matter]” and in T1 (3.c) that the one in name is equivalent to the one by analogy (*bi-l-musāwā*) and “the one by analogy [is said of those things] whose relation [*nisbatuhā*] is one, e.g., the medical things [*al-ashyā’ al-ṭibbiyya*] which are related as a whole to medicine [*ṭibb*] [e.g., scalpel and healthy food].” I do not know what al-Kindī means when he says in T1 (2.c) that the one in name is in the domain of both the form and the matter. As for the characterization of the one by analogy in T1 (3.c), it very closely follows Uṣṭāth’s translation of the characterization of the one by analogy in T3: in Uṣṭāth’s translation, Aristotle says *والتى بالمساواة واحد هي التى نسبتها واحدة كنسبة الشيء إلى شيء آخر*; in T1 (3.c), al-Kindī simply takes this and replaces *والتى بالمساواة واحد هي التى نسبتها واحدة* with his example of this case of the one: *والواحد بالمساواة هي التى نسبتها واحد، كالأشياء الطبية المنسوبة جميعا إلى الطب*.

⁴²⁴ More on Aristotle’s characterization of the genus as matter or subject with respect to the differentiae or his close association of genus with the subject or the matter see Footnotes n.384 and 392 in Section 4 above.

⁴²⁵ As I pointed out in Section 3 above, the late antique Greek commentators on *Phys.* I.2 for the most part agree on dividing the senses of unity first into two: the one in name (*onomati*) and the one in reality (*pragmati*). Then they go on to divide the one in reality into the one in genus, the one in species, and the one in number. As I suggested in Section 3, by the one in name, these commentators seem to mean what Aristotle means by the one by analogy.

It does not seem that al-Kindī means to equate the one by analogy to or subsume under it any of the senses of unity discussed in the rest of *Met.* Δ.6. Of the senses of the one *per se* discussed in *Met.* Δ.6 apart from those mentioned in the two lists in T2 and T3, it does not seem to be fitting to place the case (V) of the one said of the first measure of a genus (discussed at 1016b17-31, and more extensively in *Met.* Iota 1 1052b3-b8) under any of the four senses of unity al-Kindī discusses in T1.

Chapter 3: The senses of the one by virtue of circumscription (*inḥiyāz*)

As mentioned in the Introduction Chapter, there are three major differences between al-Fārābī's discussion of unity and multiplicity in *KW* and Aristotle's discussion of them in the *Metaphysics* and this dissertation addresses two of those differences. In the previous chapter, I explained how, unlike Aristotle, al-Fārābī distinguishes the senses of unity used in one-place contexts from the senses of unity used in many-place contexts, and how al-Fārābī articulates his senses of unity in number so that it can ground all the senses of unity used in many-place contexts. In this chapter, I explain al-Fārābī's senses of unity by virtue of circumscription (*inḥiyāz*). To put it roughly, something is said to be one in this sense because it is circumscribed by a proper extremity (*nihāya takhuṣṣuhu*) or by a proper place (*makān yakhuṣṣuhu*) or by its quiddity (*māhiyyatuhu*) and this means that that thing 'has' this extremity, or place, or quiddity and nothing else 'has' it.

There is nothing that clearly corresponds to these senses of unity in Aristotle's discussion of the senses of unity in the *Metaphysics*. This invites the questions "from what sources did al-Fārābī develop these senses of unity" and "what were the theoretical interests that led al-Fārābī to develop these senses of unity?" To put it briefly, I argue that the ideas expressed by the Greek term "*perigraphē*" are in the background of al-Fārābī's idea of circumscription, but al-Fārābī's idea of unity by virtue of circumscription and the closely related idea of being by virtue of circumscription by an extramental quiddity (*māhiyyaⁱⁿ mā khārija al-naḥs*) are not found in these Greek sources. I argue that al-Fārābī was led to develop these senses of unity and being primarily in response to his understanding of Aristotle's argument for the strong equivalence between being and unity in *Met.* Γ.2 and Iota 2. As argued below, in Iota 2, Aristotle seems to identify the sense of unity that corresponds to being according to this argument as the sense of unity as the first measure of a genus, but this proposal raises problems. I argue that to solve those problems, al-Fārābī articulated his senses of unity and being by virtue of circumscription by a quiddity as the senses of being and unity which are equivalent to each other in a strong way that will be specified below.

The senses of unity by virtue of circumscription are used in one-place contexts. As mentioned at the end of Chapter 2 Section 1, al-Fārābī provides accounts of other senses of unity used in one-place contexts in *KW* too, but either it is the case that we can easily see how they are developed from some ideas of unity discussed by Aristotle or that they are not as important in the overall

metaphysical project of al-Fārābī as the sense of unity by virtue of circumscription by a quiddity. So, I discuss extensively only the sense of unity by virtue of circumscription by a quiddity and the closely related senses of unity.

This chapter has three sections. Similar to the way I organized Chapter 2, I will first present a synoptic account of al-Fārābī's senses of unity by virtue of circumscription and the closely related sense of unity *qua* uniqueness. After clearly explaining what these senses of unity mean, in Section 2 I will review passages from mainly late antique Greek philosophers which use an idea denoted by the term “*perigraphē*” (or the related terms) in Greek, and I will show that this idea likely lies in the background of al-Fārābī's idea of circumscription (*inḥiyāz*). In the third and the final section, I spell out the theoretical motivations that led al-Fārābī to develop his senses of unity by virtue of circumscription and the corresponding sense of being by virtue of circumscription by an extramental quiddity.

Section 1: Al-Fārābī's senses of unity by virtue of circumscription (*inḥiyāz*) and unity *qua* uniqueness

I defend below that the core idea of al-Fārābī's account of unity by virtue of circumscription (*inḥiyāz*) is unique possession and separation by means of it which provides identity and difference conditions for the things we want to quantify over. We can represent the senses of unity by virtue of circumscription generally as follows: X is said to be one by virtue of its being circumscribed by Y (in the relevant class C) *just in case* X ‘has’ Y in some specified sense of having and *only* X ‘has’ it (among the things in C); so, as it were, Y draws a boundary between X and everything else (in C) so that by looking at whether we are talking about ‘the area delineated’ by Y or ‘outside of it’ we can say whether we talk about X or something else (in C). Al-Fārābī discusses the senses of unity by virtue of circumscription by its proper extremity (*nihāya takhuṣṣuhu*), by its proper place (*makān yakhuṣṣuhu*), and by its quiddity (*māhiyyatuhu*).

Al-Fārābī first presents the two senses of unity by virtue of physical circumscription (i.e., by a proper extremity or by a proper place) in *KW* 16 and then the sense of unity by virtue of circumscription by a quiddity in *KW* 17. As, I hope, my following explanation will illustrate, it is easier for someone to understand first in what sense something is said to be one because it is

circumscribed from other things by its proper extremity or by its proper place and then by using this to understand in what sense something is said to be one because it is circumscribed from other things by its quiddity than the other way around. Moreover, when al-Fārābī talks about physical circumscription and circumscription by a quiddity in *KW*, he usually presents physical circumscription first and then circumscription by a quiddity.⁴²⁶ This suggests al-Fārābī's acknowledgement that someone would find it easier to understand the senses of unity by virtue of physical circumscription first and then the sense of unity by virtue of circumscription by a quiddity than the other way around. This minimally means that al-Fārābī thought his readers would find his discussion of the senses of unity by virtue of circumscription easier to follow if he presented the senses with physical circumscription first than the other way around. I think that the fact that it is easier for someone (with the requisite philosophical knowledge and interest) to conceive first the senses with physical circumscription and then the sense with circumscription by a quiddity than the other way around lends some support to the more robust claim that al-Fārābī developed first the senses of unity by virtue of physical circumscription and then analogically extended it to the sense of unity by virtue of circumscription by a quiddity. This is because I think that the following principle is a reasonable principle: of the two related ideas such that a philosopher developed one from the other, when we want to decide whether this philosopher developed the first idea from the second or the other way around, if generally speaking it is easier for *anyone* with the requisite philosophical knowledge and interest to understand the first idea and then the second idea using their understanding of the first idea than the other way around, it is reasonable to assume, barring other evidence, that *this philosopher* first conceived the first idea and developed the second idea from it than the other way around. In the next section, I will present another reason for my contention that al-Fārābī first developed his idea of physical circumscription and then analogically extended it to circumscription by a

⁴²⁶ When al-Fārābī talks about physical circumscription and circumscription by a quiddity, he follows the order of physical circumscription first and then circumscription by a quiddity also in *KW* 47-9, *KW* 64, *KW* 71, *KW* 77-8, and *KW* 84. However, this order is not universal. When al-Fārābī starts to discuss whether anything is said to be many in a sense that is the opposite of a given sense of unity, he first discusses the opposite of the one by virtue of circumscription by a quiddity in *KW* 27 and then he discusses the opposite of the one by virtue of physical circumscription in *KW* 28. Also, in his review of the senses of unity, al-Fārābī briefly lists the senses of unity by virtue of circumscription in *KW* 82 and *KW* 83, and in these brief lists, he first mentions the sense of unity by virtue of circumscription by a quiddity and then he mentions the senses of unity by virtue of physical circumscription.

quiddity. I want to add with emphasis that most of what I say in this chapter would not be affected in any significant way even if I am not right about this particular point.

a. Physical circumscription

Al-Fārābī states in *KW* 16 that “any body circumscribed [*munḥāz*] by its extremity which is proper to it [*takhuṣṣuhu* was said to be one” (50.5-6 = 49.5-6). In the rest of this paragraph, al-Fārābī also mentions that a human is said to be one because he is circumscribed by his place (50.12-3 = 49.9-10). Being circumscribed by its proper extremity and being circumscribed by its proper place are closely related because “the [proper] place [of a body] is the extremity which is outside and fits the body [*nihāya gharība munṭabiqā ‘alā al-jism*]” (50.9 = 49.6-7). As I will discuss in greater detail in Section 2, Aristotle characterizes the place of X as the innermost extremity of the body containing X; the proper place of X fits X from outside without any ‘gap’ left in between, and in this sense the proper place of X ‘has’ X and only X. Indeed, talking about place in *KH* 46, al-Fārābī says, “when Aristotle defines place in the *Physics*, he says that it is the extremity of what contains [*nihāyat al-muḥīṭ*]”⁴²⁷ (89.1-2).

Since only bodies have places and the sort of extremities at issue here, circumscription by a proper extremity and circumscription by a proper place apply only to bodies (see, e.g., *KW* 64 77.13-4 = 65.4), but they do not mean the same thing because as stated right above, the proper place of X is not X’s extremity, but rather it is the innermost extremity of the body which contains X. Moreover, they are not even coextensive. Al-Fārābī points out in *KW* 16 that the universe is not circumscribed by a place because it does not have a place because there is no body that surrounds it from outside (50.11-2 = 49.8-9).⁴²⁸ That said, it seems to be implied that the universe is circumscribed by its proper extremity because the outer extremity of the outermost heaven would also be the proper extremity of the whole universe.

So, there is at least one thing, the universe, which is circumscribed by its proper extremity, but it is not circumscribed by its proper place because it is not in a place. It holds more generally that

⁴²⁷ Mahdi prints إنه النهاية المحيط ... but it seems to me that it should be either نهاية المحيط or النهاية المحيطة; given Aristotle’s characterization of place as the extremity (نهاية) of the body which contains (المحيط), I opted for the first.

⁴²⁸ For the source of this idea, see *Phys.* IV.5 212b11-22.

54.7-10). Moreover, it seems that the conditional in T1 (2) is a bi-conditional: a body X is circumscribed by its proper extremity just in case it is not continuous with another body.

If we subtract the information provided in T1 (2) from T1 (1), the additional information provided in (1) seems to amount to the claim that if a body is not circumscribed by its proper place, it is in contact with or continuous with another body. The borderline exception to this rule is the whole universe; it is not in contact nor continuous with another body because there is no body outside of it, but precisely for this reason it does not have a place either, and hence is not circumscribed by a place. We can make sense of the claim we obtained from T1 (1) if we look at Aristotle's characterization of being in touch in *Phys.* V.3 which al-Fārābī seems to follow in *KW*. Aristotle says at *Phys.* V.3 226b21-3, "I claim that things are together in place [*hama... kata topon*] if they are in one primary place [*en heni topō(i)... prōtō(i)*], and they are separate if [they are in] different [primary places], and they are in touch [*haptesthai*] if their extremities [*ta akra*] are together." In this passage, Aristotle first characterizes when we say that two things are together in place (*hama kata topon*); then he characterizes being in touch (*haptesthai*). He states that two things are in touch if their extremities are together (*hama*). It appears that when Aristotle talks about being together (*hama*) without any qualification, he still talks about the same thing as being together in place (*hama kata topon*), but only bodies can be in place (and hence in one primary place), so only bodies can be together in place, not extremities of bodies.

This passage does not seem to present complete and precise characterizations of these two ideas. We can make better sense of what Aristotle seems to mean when he talks about two bodies' being together in place and their being in touch using other passages from Aristotle. The rest of *Phys.* V.3 and other relevant passages help us to get clearer on what it takes for two bodies to be in touch in similar contexts, and with the help of Aristotle's account of place earlier in the *Physics*, we can make better sense of what Aristotle means when he talks about two bodies' being in one primary place.

In the rest of *Phys.* V.3, Aristotle characterizes being in succession (*ephexēs*), being contiguous (*echomenon*), and being continuous (*suneches*) (226b34-7b2). Two things are in succession if there is an order between these two things (one of them is taken to be the "beginning [*archē*]" in some respect) and there is nothing of the same kind between them. The order condition is not important for our purpose here, so I will ignore it. So, two houses are in succession if there is no

house between them (but there can be something of a different kind, e.g., a tree, between them). If two things are in succession and are also in touch, they are contiguous. It seems reasonable to infer from this and from Aristotle's use of being in touch in other places that being in touch minimally requires that there is no third body between the two bodies along with their surface of contact (and also no void or no extension which is not a body (or not filled with a body) as Aristotle argued against these in *Phys.* IV). That not having a third body in between is, at least, a necessary condition for being in touch is also confirmed in *DA* II.11. Aristotle asserts that "if there is some body between two bodies, these [two bodies] cannot touch each other," but "if some [bodies] touch each other in water, since their extremities [*akra*] are not dry, there must be water between them, with which [sc. water] their extremities are covered [*anaplea*]; if this is true, one thing cannot touch another in water, and the situation is also the same in air, for the things which are in air stand with respect to air as the things in water stand with respect to water, but it rather escapes our notice just as [it escapes the notice of] the animals living in water whenever a wet thing [*dieron*] touches another wet thing" (423a23-4, a26-b1). So, if there is a body between two bodies, they are not in contact, at least, along that portion of their extremities. Also, Aristotle asserts in this passage that a body cannot touch another body if both are in water, strictly speaking, because they are completely covered in water, and likewise, animals who live in air, like ourselves, are completely covered in air, but just as it escapes the notice of the animals living in water that two things that appear to be in contact in water are not actually in contact, it escapes our notice that two things that appear to be in contact around us are not actually in contact but rather they are completely covered in air.

As we saw above, Aristotle says in *Phys.* V.3 that if two things do not have the same kind of thing between them, they are in succession, and if they are in touch in addition, they are contiguous. Aristotle adds that continuity is a kind of contiguity; two bodies are contiguous if their extremities are together. I take this to mean that between the extremities of these bodies there is no 'gap', no body (or void, or some other sort of extension). If in addition to having no 'gap' between them, the extremities (*akra*) or the limits (*perata*) of these two bodies become one, they are continuous. So, in this way, there is a strict implication between being successive, contiguous, and continuous. If two things are continuous, they are also contiguous (because since their extremities became one, there is no 'gap' between their extremities), and if they are contiguous, they are also in succession (because there is nothing of the same kind in between,

i.e., no third body between them), but it does not always hold the other way around. In particular, “if [two bodies] are in touch, they are not yet continuous because their extremities do not have to be one when they are together” (227a21-3).

This all looks fine but Aristotle’s claim about what sort of things are continuous is somewhat confusing. Right after saying that the continuous is a kind of the contiguous, Aristotle defines the continuous as follows: “when the limits of both bodies along with which [*hois*] they touch become one and the same, then [these bodies] are continuous, and just as the word [“continuous”, or “what holds together”, *suneches*] indicates, they would be continuous [or held together, *sunechētai*], but this is not possible if there are two [distinct] extremities.” After this, Aristotle adds, “this being defined [sc. the continuous], it is clear that the continuous belongs to those things out of which some one thing naturally arises by contact [*sunapsis*], and in whatever way what holds them together [or what makes them continuous, *to sunechon*] is one, the whole will also be one in the same way, e.g., by a bond [*gomphō(i)*], or by a glue [*kollē(i)*], by touch [or grasp, *haphē(i)*], or by organic adhesion [*prospousei*]” (227a10-7).

We know from *Met.* Δ.6 and *Iota* 1 that among the continuous things what is naturally continuous is said to be one to a greater degree than what is artificially so (by gluing, by a bond etc.). What is not entirely clear to me here is whether when Aristotle talks about *haptesthai* (or *haphē*) which I translated as being in touch or in contact, he means being in contact in a general sense according to which two things are in contact, whether they are rigidly holding onto each other so that they cannot be separated or they are not rigidly holding onto each other so that they can be separated, or he means being in contact in a special sense according to which two things which are in contact rigidly hold onto each other. The Greek terms can have both senses. According to the specific sense, it would be better to translate *haptesthai* (and *haphē*) not as being in touch or in contact simply, but more specifically grasping something, or fastening itself to it. The ambiguity with Aristotle’s use of *sunechesthai* here either in the general sense of being held together or in the specific sense of being continuous, in connection with the technical term *suneches* (continuous), adds to the complication with the ambiguity with Aristotle’s use of *haptesthai* (or *haphē*) here. It seems that we face two congruent interpretive positions about the interpretation of these terms in *Phys.* V.3. Either *haptesthai* is used in the general sense of being contact and if two bodies which are in contact have their extremities unified, they would be

rigidly in contact, and vice versa. So, according to this interpretation, *haptesthai* means being in contact, rigidly or non-rigidly, and being rigidly in contact and being continuous mutually imply. And things which are continuous, or rigidly in contact, or held together (*sunechomena*) can be so artificially (by a bond, or a glue, or by *haphē*) or naturally (by organic union); if they are so naturally, they are said to be continuous to a greater degree but even if they are so artificially, they are still said to be continuous. Alternatively, *haptesthai* means being rigidly in contact and of the things which *haptontai* in this special sense, if they are so artificially, their extremities are not unified and they *haptontai* without being continuous, but if there are so naturally, their extremities are unified, and they are continuous. In other words, either *haptesthai* in *Phys.* V.3 generally means being in touch or in contact (separably or inseparably), and there are artificial and natural varieties of continuity, or *haptesthai* means being in contact *rigidly*, i.e., grasping another thing, or fastening itself to another thing, and in that case, it appears that only the things which are held together naturally or artificially are contiguous, and in particular, those which are held together naturally are continuous. According to the special sense of *haptesthai*, the body of water that surround a fish and this fish are not said to *haptesthai* along with their surface of contact because the fish is not tied to that body of water along with that particular surface, but the fish can leave that particular surface of the surrounding body of water behind, and precisely in this respect, the fish is said to be in place in actuality because it can leave behind its place (that particular surface of the surrounding body along with which the fish is in contact with the surrounding water) and hence can locomote. As we will see in the next section, Aristotle's considered opinion seems to be that a body is actually in place just in case it is in contact with the surrounding body completely without being rigidly attached to it so that it can be detached from the surrounding body and move to another place; one of Aristotle's main reason for looking for the correct definition of place in *Phys.* IV is to explain motion in respect of place, and this requires the body that is subject to motion in respect of place to be able to leave behind its place.

After arguing in the following account in *Phys.* V.3 that if two things are continuous, they are also contiguous but not the other way around because their extremities can be together without being one, Aristotle observes, “so, organic growth [*sumphusis*] is the last thing [*hustatē*] in respect of generation, because if the extremities will organically grow together [*sumphusetai*], they must already be in touch [*hapsasthai*], but not all the things which are in touch organically grow together, yet it is clear that in the things in which there is no touch [*haphē*], there is no

organic growth either” (227a23-7). This passage too does not confirm whether Aristotle thinks in *Phys.* V.3 that *haptesthai* generally means being in contact and things can be continuous by being held together artificially or naturally, or that *haptesthai* more specifically means being in contact *rigidly* and things are said to be continuous if they are held together naturally. Since Aristotle mentions only the natural case with the continuous in this last passage, this passage can perhaps be taken to lend support to the latter view, but it is also possible that Aristotle holds the former view but he mentions here only the *prominent* case of continuity, i.e., continuity by nature, not implying that this is the *only* case of continuity.

We started to talk about Aristotle’s account of being successive, contiguous, and continuous in *Phys.* V.3 in order to clarify Aristotle’s claim at the beginning of this chapter that “things are together in place [*hama... kata topon*] if they are in one primary place, and they are separate if [they are in] different [primary places], and they are in touch [*haptesthai*] if their extremities [*ta akra*] are together” (226b21-3). I suggested above that being together in place (*hama kata topon*) should apply only to bodies, so when Aristotle talks about the extremities of some bodies being together (*hama*), he cannot literally mean that their extremities are together in place, even though he does not provide any indication that by “together (*hama*)” simply he means something different from “together in place (*hama kata topon*)” in this passage. Due to this difficulty, I decided to look for a clarification of what Aristotle seems to mean when he says that two bodies are in touch using the rest of *Phys.* V.3 and other passages by Aristotle. I argued so far that two bodies are said to be in touch minimally because there is no other body (or void, or some other sort of ‘gap’) between the parts of the extremities of these two bodies along with which they are in touch. This seems to be the necessary and the sufficient condition for the general sense of being in touch (*haptesthai*), but there is also a more special sense of *haptesthai*, according to which two bodies are said *haptesthai* just in case in addition to having no other body between their touching extremities, they are held together in this condition artificially or naturally.

As for Aristotle’s characterization of being together in place (*hama kata topon*), the primary place (*prōtos topos*) is the central idea here because two things are said to be together in place if they are in one primary place. As will be explained in greater detail in Section 2 below, the proper place of a body X is the innermost extremity of the body which surrounds X and is in touch with X completely so that no ‘gap’ is left between the extremity of X and the extremity of

the surrounding body. A common place of X is its place that it shares with other distinct bodies, but the proper place of X is not the place of any other distinct body. Aristotle's example of the proper (*idios*) and the primary place at *Phys.* IV.2 209a31-b1, which is quoted as T1 in Section 2.a below, is that I am in the heaven because I am in the air and it is in the heaven; I am in the air because I am on the earth and the earth is in the air; I am on the earth because I am in my proper place which has only me and nothing else and my proper place is on the earth. My proper place is my primary place because I am in these other places ultimately because I am in my proper place but not the other way around. So, two distinct things cannot have the same proper place; they can only have the same common place. When Aristotle says at *Phys.* IV.5 212b25 that "two bodies are not in the same place," he should mean that they are not in the same proper place.

If the proper place and the primary place practically mean the same thing, two distinct bodies in the strong sense cannot be in the same primary place. But there is a looser sense of being in place too. So far, we have been talking about being in a place *actually*. As I briefly mentioned above and will discuss below in the following section, explaining locomotion is one of the main motivations behind Aristotle's account of place in *Phys.* IV, and he thinks that something is *actually* in place if it can leave behind the innermost extremity of the surrounding body which is completely in touch with it, i.e., its proper place, and according to the two senses of being in touch I distinguished above, being in touch here should mean *not rigidly* in contact in the way that, e.g., two glued pieces of wood are, but this thing should be *detachably* in contact with that surrounding body in order to be able to leave its innermost extremity behind.⁴³¹ On the other hand, bodies are the sort of things that can be in place, and the part of a body which is a continuous part of it or is *rigidly* in contact with the other parts of this body are not *actually* in place but they are *potentially* in place. So, my hand, being a corporeal thing, is of the sort to be in place but it is not actually in place unless it is severed from the rest of my body. So, my hand is

⁴³¹ Moreover, it seems that Aristotle's considered view is that when something is in place actually so that it can locomote, it is *completely* surrounded by *one* chunk of body. Presumably, a body can locomote if it is in some sort of fluid, like air, or water, or something of the sort. As I mentioned above, Aristotle states at *DA* II.11 423a22-b1 that things in water, or in air, or in some other liquid cannot be in contact with each other even though they might appear to be so because the air, the water, or the other sort of liquid would be between the solid bodies that appear to be in contact. This implies that a solid body that can locomote is *completely* covered by the fluid in which it is and can locomote. So, it follows that in fact no two separate solid bodies are *directly* in *detachable* contact with each other; rather, if a solid body is actually in place, throughout its surface it is detachably in contact with the fluid in which it is and can locomote, but if two solid bodies are in fact in contact, they can only be *rigidly* in contact with each other (or as a special case of this, continuous with each other), in which case each of them would be in place not *actually* but only *potentially*.

in place potentially, not actually. Likewise, each of the two pieces of wood glued together is not in place actually but only potentially. Take these two pieces of wood glued together; each of these pieces is not actually in place, and hence does not have its proper place. However, as mentioned above, things which are actually in place can have a common place they share with other things; for example, let's assume that Socrates and Plato are in this room. The innermost extremity of the air that surrounds and is in touch with Socrates is his proper place, and the innermost extremity of the air that surrounds and is in touch with Plato is Plato's proper place, but this room is their common place as the place which contains both Socrates and Plato. Similarly, it seems that Aristotle would allow us to talk about the common place of things which are not actually in place. So, if the two pieces of wood glued together are put in this room, it seems admissible to say that this room is their common place, as well as the building in which this room is located, and so on. As mentioned above, the main idea of the primary place seems to be that of the (proper and common) places of X, say, A, B, and C, if it is the case that X is in C ultimately because X is in A, and X is in B ultimately because X is in A but not the other way around, A is the primary place of X. It seems that Aristotle allows the application of this idea to things which are not actually in place but only potentially in place. So, I am actually in place and the innermost surface of the air that surrounds me and is in touch with me is my proper place; my body parts are not actually in place but only potentially in place. Of the actual places that contain, e.g., my hand (this building, this room etc.), the place that is contained by all the others is the actual place of my whole body. In a sense, the actual place of my whole body is the smallest actual place containing my hand. There is no smaller actual place containing my hand that is contained by the actual place of my whole body because there is no actual place that contains only a part of my body because any proper part of my body, no matter how big it is, is only potentially in place as long as it is a part of my body, properly speaking. So, in this sense, it seems admissible to say that the primary place of my hand is the actual place of my whole body, and likewise, the primary place of, e.g., my leg is also the actual place of my whole body etc. So, all my body parts have one primary place, which is the actual proper place of my whole body. In this sense, it seems that according to Aristotle's claim that "things are together in place [*hama... kata topon*] if they are in one primary place, and they are separate if [they are in] different

[primary places]” at *Phys.* V.3 226b21-3, two bodies which are continuous with each other or which are *rigidly* in contact with each other would be together in place.⁴³²

In short, for Aristotle being in touch or contact (*haptesthai*, *haphē*) generally means that between the extremities of two bodies, there is no third body. There is a more special sense of *haptesthai* or *haphē* in Aristotle too, and according to this more special sense of these Greek terms, it would be better to translate them as grasping or fastening itself to something, but to reflect this ambiguity I usually translate these terms in the same way. According to this special sense, two things are said to be in touch (*haptesthai*) if they are *rigidly* in touch; this could be so artificially (by means of gluing or binding etc.) or naturally (in the case of organic union between the body parts). Two bodies are said to be continuous if, in addition to having no third body between their extremities, the extremities of these two bodies become one. In this sense, if two bodies are continuous, they are also contiguous but if they are contiguous, it does not always follow that they are continuous. I pointed out above that it is not entirely clear in *Phys.* V.3 whether by “being in touch (*haptesthai*)” Aristotle means the general sense of this term or the special sense of it. But when Aristotle characterizes what it takes for two bodies to be together in place, he seems to mean primarily two bodies which are *rigidly* in contact (and as a special case of this, continuous) with each other.

Whether Aristotle uses *haptesthai* and the related terms in the general sense or in the special sense in *Phys.* V.3, al-Fārābī uses the corresponding Arabic terms (*mumāssa* and the related terms) in the special sense of being *rigidly* in contact in *KW*. When al-Fārābī first introduces the sense of unity *qua* a whole (*jumla*) applying to corporeal things in *KW* 13 right after his discussion of the sense of unity *qua* continuous, he says that the sense of unity *qua* a whole applies to a body composed of body parts such that “some [parts] are not continuous with other [parts], but rather, they are in mutual contact [*mutamāss*] with other [parts] by bonds [*ribāṭāt*] – just like a ship made of wood or a door made of pieces of wood which are not continuous but in mutual contact by the attachment [*rabṭ*] of some [parts] to others or with welding or with glue or

⁴³² In addition to this, Aristotle might also consider the bodies which form a homeomerous compound to be together in place; e.g., when water and honey are thoroughly mixed, if the resulting chunk of syrup is put in a jar, the primary place of this chunk of syrup is this jar and hence in a way the primary place of the water and the honey used to produce this syrup is also this jar, but not actually because the water and the honey are not present in the syrup actually as distinct bodies, assuming that a truly homeomerous mixture produces a new substance. That said, in the passages under consideration, Aristotle does not seem to be particularly interested in homeomerous mixtures.

through the holes of pegs or by binding or by plugging from outside so that some [parts] would have become inseparable [*yalzamu*] from others and not disjointed. On account of that, [the composite] was also said to be one, and the meaning of its unity is the bond by which some [parts] became inseparable from others, that [bond] being natural or artificial” (48.8-49.2 = 48.2-7). It is worth noting that unlike in *Phys.* V.3, al-Fārābī does not seem to treat the continuous as a kind of the contiguous because he seems to imply in this passage that being continuous and being in contact are mutually exclusive, but the difference between the two accounts is not great if we observe that al-Fārābī might be calling those things “in contact [*mutamāss*]” which are properly contiguous, i.e., contiguous and not continuous. It is also possible that al-Fārābī found Aristotle’s account of the continuous as a kind of the contiguous in *Phys.* V.3 not correctly reflecting the actual use of these terms as technical terms. In any case, there is little doubt that the things “in contact [*mutamāss*]” according to al-Fārābī are things which are *rigidly* in contact so that one part “is inseparable [*yalzamu*]” from another part. Also, I suggested above that according to an interpretation of Aristotle’s account in *Phys.* V.3, of the things which are in contact, if they are in contact by nature, they are continuous; al-Fārābī clearly states at the end of this passage that things which are in contact can be so artificially or naturally, and he does not say that the things which are in contact by nature are continuous with each other.

Also, in *KW* 95, al-Fārābī combines Aristotle’s characterization of being together in place and his characterization of being in touch at the beginning of *Phys.* V.3 as a characterization of being in touch. *KW* 95 is the last paragraph of *KW*, and here al-Fārābī presents his general remark on the senses of unity. He states that it is common to all the senses of unity that a sense of unity applies to things because something about them is undivided. Then he quickly goes through the senses of unity and specifies the aspect in which the relevant thing is undivided and because of which they are said to be one in that sense of unity. In particular, about unity *qua* continuous and unity *qua* a corporeal whole, i.e., a body which is composed of body parts which are in contact (*mutamāss*), he says “the continuous is undivided with regard to extremities, and those which are in mutual contact [*al-mutamāssa*] are undivided with regard to the places of their extremities, for any two things [in mutual contact] are in one primary place [*makān wāḥid awwal*]” (102.6-8 = 81.9-10). Recall that Aristotle says at the beginning of *Phys.* V.3 that “things are together in place if they are in one primary place, and they are separate if [they are in] different [primary places], and they are in touch if their extremities are together” (226b21-3). Al-Fārābī claims that if things are

undivided with regard to their extremities, i.e., if they have the same extremity, they are continuous with each other. If two things are undivided with regard to the places of their extremities, i.e., if their extremities have the same place, they are in contact, and this is cashed out later by saying that these two things which are in contact are in one primary place.

All this discussion of what al-Fārābī means by being in contact based on what Aristotle means by it in *Phys.* V.3 is to explain what seems to be implied by T1 (1). Recall that T1 (1) states that “if [something] is not circumscribed by a certain extremity and by a certain place, it is in contact or continuous [with something].” As mentioned above, if we subtract the information provided in T1 (2) from T1 (1), what we are left with in T1 (1) is that if a body is not circumscribed by its proper place, it is in contact or continuous with another body with the exception of the borderline case that the universe is not continuous nor in contact with another body because there is no body outside of it, but for this very reason, it is not in a place either and hence is not circumscribed by its proper place. For every other body, we can observe that if a body is not circumscribed by its proper place, it does not have a proper place. This means that it is continuous with another body or it is in contact with another body in the special sense of being in contact, i.e., being *rigidly* in contact with another body.⁴³³ Also, although al-Fārābī does not state the converse of this claim explicitly in T1, we can observe that if a body is circumscribed by its proper place, it is neither in contact nor continuous with another body because if a body is circumscribed by its proper place, it has a proper place, and then it is actually in place, so there is a body which completely surrounds it and is *detachably* in contact with it, and the touching inner surface of this surrounding body is its place; in that case, there is no third body between the outer extremity of this body and the inner extremity of the surrounding body which is detachably in contact with the outer extremity of this body completely; so this body is not continuous with another body and it is not in contact with another body in the special sense of being in contact, i.e., being *rigidly* in contact with another body. If we put this observation together with our previous observations about T1, we obtain two biconditionals from T1:

⁴³³ Although al-Fārābī does not consider homeomerous mixtures in this context in *KW*, perhaps the components of a homeomerous mixture can also be counted among the bodies which do not have their proper places (e.g., the chunk of water and the chunk of honey which are thoroughly mixed to produce a chunk of syrup; the syrup is actually in place and has its proper place, but the water and the honey which are used to produce this syrup are no longer actually in place).

(1) a body is circumscribed by its proper extremity just in case it is not continuous with another body.

(2) a body is circumscribed by its proper place just in case it is neither continuous nor in contact with another body (with the exception of the whole universe).

So, if a body is circumscribed by its proper place, then it is not continuous with another body and hence is also circumscribed by its proper extremity, but the converse does not have to hold; a piece of wood which is glued to another piece of wood is circumscribed by its extremity, but it does not have a proper place and hence is not circumscribed by a proper place. The case of the universe is another counter-example for the converse: the universe is circumscribed by a proper extremity but not by a proper place. So, being circumscribed by a proper extremity has a strictly greater extension than being circumscribed by a proper place.

Having clarified the extension of the senses of unity by virtue of circumscription by a proper place and that by a proper extremity, let me turn now to explain in what respect something which is circumscribed by its place or its extremity is called one. First of all, when al-Fārābī uses the full locution for the senses of unity by virtue of circumscription, he says something along the lines of “X is one by virtue of being circumscribed from Ys (*munḥāz ‘an*) by Z (*bi-*).” So far, I have discussed circumscription by a place and by an extremity; in the following, I will also discuss circumscription by a quiddity. In the case of the physical circumscription, i.e., circumscription by a place or by an extremity, X stands for some bodies and Ys stand for other bodies left outside. So, when we say that X is circumscribed by its proper extremity, we mean that X’s extremity contains only X and leaves out every other body (except for the corporeal parts of X which are not other than X in a strong sense). It is similar with the circumscription by a place too. In *KW* 77, talking about “what is circumscribed by a certain place from other things [*‘an ghayrihi*],” al-Fārābī says that “each one of them is one and the sense of its unity is its separation [*infirāduhu*] by a certain place. So, what is one [*al-wāḥid*] here means what is separated by a certain thing with the exclusion of other things [*dūna ghayrihi*]” (88.15-9.3 = 72.7-9). So, a body is called one body in the sense of unity by virtue of physical circumscription because this body is contained as a whole in its proper place or extremity and no other body is contained in it; its proper place or extremity functions as a boundary which, as it were,

completely wraps the contained body as one whole, and separates it from all the bodies that are left outside.

To see this more concretely, let's consider a simple picture of the physical world according to which the world is divided into corporeal substances that are in contact with each other without any void between them. If we imagine someone who cannot perceive the actual boundaries between the corporeal substances that make up the physical world, that person cannot successfully quantify over those corporeal substances: this person cannot distinguish this corporeal substance from that one. What the boundaries supply is a condition for identity and difference: I can successfully refer to *this* body by pointing at the boundary which contains this body and only this body. *This* body is not *that* body because *that* body is not contained in the boundary of *this* body; *that* body is contained in its own boundary, which allows me to distinguish *that* body also from *that other* body over there.

A body is said to be circumscribed by its proper place or its proper extremity just in case that body is contained by its proper place or extremity, and it is separated from every other body by its proper place or extremity. If we do not want to say that al-Fārābī uses the term “*inḥiyāz*” arbitrarily, “*inḥiyāz*” must mean something meaningfully similar in “*inḥiyāz* by a quiddity” as it does in “*inḥiyāz* by a proper place” or “*inḥiyāz* by a proper extremity.” I say “meaningfully similar” and not “the same” because the idea of physical circumscription cannot literally apply to quiddities because a quiddity is not a physical boundary like the place or the extremity of a body. As I discuss in detail below, al-Fārābī points out that the senses of unity by virtue of circumscription by a place or by an extremity apply only to bodies whereas the sense of unity by virtue of circumscription by a quiddity applies to everything, corporeal or incorporeal (*KW* 64 77.13-8.2 = 65.4-6). Accordingly, the “*inḥiyāz*” in “*inḥiyāz* by a quiddity” must mean something more general than the “*inḥiyāz*” in “*inḥiyāz* by a proper place” or “*inḥiyāz* by a proper extremity” so that the former can have the widest possible extension while the latter applies only to bodies. We are seeking the core of the concept of circumscription which is common to both physical circumscription and circumscription by a quiddity, despite the differences between them.

b. The general idea of circumscription (*inḥiyāz*) including circumscription by a quiddity

The way forward is suggested by an analysis of the sense of physical circumscription. Its analysis suggests that the underlying general idea is unique possession and the separation by means of it: a body is circumscribed by its place, for example, just in case this body ‘has’ that place, and only this body ‘has’ that place; since no other body left outside ‘has’ that place, this body is separated from the other bodies so that we can use ‘having’ this place as an identity marker of this body among all the bodies (except for the bodily parts of this body which are not other than this body in a strong sense of otherness). So, this analysis reveals the more general idea lying at the core of the physical sense of circumscription. We do not need to understand the ‘having’ relation in terms of physical containment and delineation as in the case of circumscription by a place or an extremity. If the ‘having’ relation is understood more generally, the idea of circumscription can also be generalized to cases beyond the bodily cases. In a sense, we can say that something has a quiddity, and only this thing has that quiddity so that having that quiddity functions as an identity marker for this thing and in this way ‘unifies’ it, i.e., makes it one thing among others so that we can identify this as one thing in the range of things we want to quantify over. Accordingly, that X is one *qua* circumscribed by a quiddity would hold just in case two conditions obtain: (1) X has this quiddity, and (2) only X has this quiddity (in the relevant class).⁴³⁴ I defend that this is indeed necessary and sufficient for al-Fārābī’s idea of circumscription by a quiddity. The first condition holds because as I will say more about this below,⁴³⁵ everything we can meaningfully talk about, whether it exists in reality or only in our mind, has a quiddity in reality or in our mind. As for the second condition, there are a number of passages in *KW* that imply or state it. Let me present three of them. First of all, in *KW* 83 al-Fārābī starts to list the senses of unity discussed earlier and he also mentions “what is one by virtue of the fact that it is circumscribed by a certain quiddity from things other than itself among what has a quiddity [*‘ammā siwāhu mim mā lahu māhiyya*]” (92.7-8 = 74.9-10). So, X is said to be one in this sense because among the things that have a quiddity, i.e., everything, only X has that quiddity. Also, right after providing the sufficient conditions for the application of the senses of unity by virtue of circumscription by a place and by an extremity reproduced above as T1, al-Fārābī states the sufficient condition for the application of the sense of unity by virtue of

⁴³⁴ More on the relevant class, see below Subsection d.

⁴³⁵ More on this, see below Subsection c.

circumscription by a quiddity; he says, “if it is not circumscribed by a certain quiddity, but rather it participates with something else in a certain quiddity, it and that which participates with it in that quiddity are one in predicate”⁴³⁶ (92.12-4 = 74.14-5). So, if X is not circumscribed by a quiddity, then there exists Y such that X and Y share that quiddity (so that X and Y are one in predicate, i.e., that quiddity). In other words, if X is not circumscribed by a quiddity, X is not the only thing that has that quiddity. Equivalently, if X is the only thing that has a quiddity, X is circumscribed by that quiddity. As I pointed out in my discussion of T1 above, although al-Fārābī explicitly states the sufficient conditions for the application of the senses of unity by virtue of physical circumscription in T1, these conditions also seem to be necessary. Likewise, it stands to reason that this condition is also a necessary condition. So,

(3) something is circumscribed by a quiddity just in case it is the only thing which has that quiddity.

We observe that circumscription by a quiddity is equivalent to having that quiddity uniquely also in *KW* 26. In *KW* 25, al-Fārābī presents the sense of unity said of something because it does not have a co-participant (*qasīm*) in a feature (*ma‘nan*) by which it is characterized (*yūṣafu*) either (a.) always or for the most part or (b.) “in relation to something and at a time.” I will discuss some details of this paragraph below,⁴³⁷ but I will just outline here the main aspects of this sense of unity. X is said to be one in this sense because Y is a feature of X and only X has this feature. (a.) X could be unique (*munfarid*) in having this feature always or for the most part, and this feature could be its essential feature or its accidental feature. For example, “the sun does not have a co-participant in the *ma‘nā* of sunness [*al-shamsiyya*] which is its species.”⁴³⁸ In such cases where something is unique in its species, it is unique in its species always. And it could also be an accidental feature. This is like “someone unequaled [*munfarid*], say, in philosophy or

⁴³⁶ For the apodosis, the mss. have هو والمشارك له في تلك الماهية واحدا بالمحمول. Mahdi adds كان at the beginning. Martini Bonadeo and her team do not add anything and change واحدا into واحد. Since the reading according to Martini Bonadeo and her team would be an apodosis which is a nominal sentence (*jumla ismiyya*), it should start with a ف; so, we should either add ف before هو and change واحدا into واحد in the mss., or simply assume that a كان at the beginning of the clause fell out, as Mahdi does. Since Mahdi’s intervention seems less intrusive, I adopted that here.

⁴³⁷ Namely, in Subsection e below.

⁴³⁸ This sentence is in all the three mss. but is left out of Mahdi’s edition; it is correctly restored by Martini Bonadeo and her team at 52.17-8. Al-Fārābī also mentions the moon and the universe (*al-‘ālam*) as examples of things which are unique in their species. We also find in Aristotle that the heavenly bodies like the sun and the moon are unique in their species (*Met. Z.15 1040a27-29*), and that the universe (*ouranos*) is unique in its species (*DC I.9 277b27-279a10, Met. Λ.8 1074a31-8*). For the problem of unique instantiation in Plotinus and Porphyry against the background of Aristotle and Alexander, see Adamson, *One of a Kind*.

in grammar or in a skill [*ḥidhq*], in the manner of what is said about Aristotle that he has no equal [*qasīm*] in philosophy or by virtue of a skill in [philosophy], for he is, as it were,⁴³⁹ said to be [the] one [and only] in [philosophy]” (56.5-8 = 53.1-3). Apparently, something can be unique in an accidental feature always or for the most part.⁴⁴⁰ Alternatively, (b.) X could be unique in relation to something and at a time; an example of this would be “someone’s saying, ‘I have a coin in my hand’, for the coin is something unique [*munfarid*] in the *ma ‘nā* it has in relation to [*bi-l-idāfa*] that time and to that person” (56.9-11 = 53.4-6).⁴⁴¹

After presenting the sense of unity *qua* unique in *KW* 25, al-Fārābī moves on in *KW* 26 to present some version of the principle of the identity of indiscernibles. In its familiar version, this principle states that if two things are indiscernible, i.e., if it is the case that when X has a feature, Y also has it, then X and Y are identical.⁴⁴² Equivalently, if X and Y are distinct, then they are discernible, i.e., there is a feature F that X has but Y does not have. Al-Fārābī states a stronger version of this principle initially but when he goes on to present a *reductio* argument to justify his version of the principle, he makes invalid moves due to the difficulties with the propositions which have multiple quantifiers, especially with the order of the universal and existential quantifiers in propositions which have both universal and existential quantifiers; such difficulties

⁴³⁹ Reading كان with Martini Bonadeo and her team against Mahdi’s كان at line 8 = 3.

⁴⁴⁰ If something is unique in an accidental feature (as opposed to a feature constitutive of its essence) it has *always*, then it seems that this accidental feature is a proprium (*idion = khāṣṣa*) of that thing in the strict sense of the proprium in *Top.* and the *Isagoge*. It seems that even if something is unique in an accidental feature it has *for the most part*, it can still be called a proprium because since the Aristotelian science studies facts that hold always or for the most part, an accidental feature in which something is unique *for the most part* would have a similar status, from a scientific perspective, as an accidental feature in which something is unique *always* (and these accidental features would be studied by a science if they are *per se* attributes of the subject-matter of that science). It is worth noting that according to the account of the propria in *Top.* (as well as in the *Isagoge*), a proprium seems to be meant *primarily* to belong to a species, not to an individual as al-Fārābī seems to have in mind primarily in *KW* 25 when he discusses the cases of the one as unique.

⁴⁴¹ This case with something unique in an accident in relation to something and at a time clearly derives from Aristotle’s account of the features which are not said to be propria “simpliciter [*haplōs*]” but only “at a time [*pote*]” and “in relation to something [*pros ti*].” More on these, see Chapter 2 Section 5 Footnote n.398, where I call them “quasi-propria.”

⁴⁴² Indiscernibility should be expressed symmetrically. In other words, X and Y are indiscernible just in case for any feature F (if X has it, Y also has it, and if Y has it, X also has it). For ease of discussion, I allow negative features, and with this, this bi-conditional formulation of indiscernibility comes to be equivalent to my conditional expression of it. In other words, I allow that if X does not have the feature of being white, it has the feature of not being white, and vice versa. If we allow this, we can infer the bi-conditional expression of indiscernibility from the conditional expression of it I use above. For this purpose, all we need to show is that if we assume that if X has a feature, then Y also has it, it follows that if Y has a feature, X also has it. Let’s assume that the intended conclusion does not hold; that is, Y has a feature, but X does not have it. Let call this feature F. Since X does not have F, X has not-F. Let’s call this feature, not-F, G. Since we assumed that if X has a feature, Y also has it, and since X has G, Y also has G. So, Y has not-F, i.e., Y does not have F. But we assumed that Y has F.

also seem to have challenged other philosophers before and after al-Fārābī, including Aristotle himself.⁴⁴³

T2 KW 26 = 53.7-14

وينبغي أن تعلم أن كل ما هو موجود وكل ما هو شيء فإنه يلزم ضرورة أن لا يكون له قسيم في شيء مما هو موصوف <به>، إما في شيء مما هو به ما هو وإما في شيء مما هو به كيف أو كم أو غير ذلك مما يوصف به. فإنه إن كان كل شيء له قسيم في كل ما يوصف به لم يتميز شيء عن شيء أصلاً ولا لشيء ولم يتميز موجود عن موجود أصلاً، وعاد الأمر إلى أن يكون معنى الموجود لا قسيم له بل يبطل أن يكون له اسم ومسمى بل تبطل المناطقة والعبارة. وهو من هذا الوجه مساوق المنحاز بماهية ما، فإنما هو منحاز بالذي ليس له قسيم فيه.

[1] You ought to know that [regarding] all that is [*mawjūd*] and all that is a thing [*shay*] it follows necessarily that it has no co-participant in something by which it is characterized: either in something by which it is what it is [*mā huwa*], or in something by which it is how [*kayfa*] [it is] or how much [*kam*] [it is], or something else by which it is characterized. [2.a] For if everything had a co-participant in everything by which it is characterized, [2.b] nothing could ever be differentiated [*yatamayyaz*] from another due to anything at all [*wa-lā li-shay*], and no being [*mawjūd*] could ever be differentiated from another being, and [3] it all would come down to the following: the *ma'nā* of being would have no co-participant, and it would indeed be invalid [*yabṭulu*] that it has a name and a named, and conversation [*munāṭaqa*] and expressing oneself [*ibāra*] would be invalid, too. [4] In this respect, it is equivalent [*musāwīq*] to that which is circumscribed by a certain quiddity, for it is circumscribed only by that in which it has no co-participant.

First of all, following al-Fārābī's language in T2, we can semi-formalize the principle of the identity of indiscernibles as stated above in this way: assuming that X and Y stand for beings (*mawjūd*) or things (*shay*) and F stands for features, i.e., "something by which it is characterized [*yūṣafu*]," where F could be an essential feature ("something by which it is what it is"), or an

⁴⁴³ See P. T. Geach, "History of a Fallacy," in *Logic Matters* (Berkeley, CA: University of California Press, 1972), 1–13. I spent quite some time to analyze the principle of the identity of indiscernibles and the claims in al-Fārābī's KW 26 to compare them with each other. Stephen Menn's remarks also alerted me to be more careful in my interpretation of some details in KW 26. Without the machinery of modern formal logic that guided my analysis of these closely related claims, I would have found it quite difficult to analyze them. There are excusable and inexcusable fallacies. The two fallacious moves al-Fārābī makes in KW 26 which are explained below are excusable, I think, given that al-Fārābī did not have the safety protocols in analyzing such sentences that modern formal logic equips us with.

accidental feature (“something by which it is how [it is, i.e., its quality] or how much [it is, i.e., its quantity], or something else by which it is characterized [i.e., an accidental feature in the remaining accidental categories]”),

(IdIn): For all X and Y, if X and Y are distinct, there is an F such that F holds of X but does not hold of Y.⁴⁴⁴

In (1), al-Fārābī expresses that if we pick anything, it has a feature that it has uniquely, be it an essential or an accidental feature. In other words, if we pick any being, X, there is an F which holds of X such that F holds of nothing other than X. If we semi-formalize this, we get:

(1SF): For all X, there is an F such that (F holds of X and for all Y (if X and Y are distinct, F does not hold of Y)).

(1SF) is strictly stronger than (IdIn). (1SF) practically states that any object is unique in a feature in the sense that any object we pick has a feature that it does not share with anything else, i.e., it has a feature which distinguishes it from everything else. By contrast, (IdIn) states that any object we pick is distinguished from anything else by a feature, but there does not have to be one single feature that distinguishes it from everything else.

In (2) of T2, al-Fārābī starts to present a *reductio* argument to defend the principle he stated in T2 (1), i.e., (1SF) in my semi-formalization. For this purpose, he should take the negation of (1SF) but he in fact assumes a stronger premise. The negation of the principle that everything has a feature that distinguishes it from everything else is the proposition that something has no feature that distinguishes it from everything else, i.e., there is something such that it shares every feature it has, at least, with something else. To put it semi-formally:

Not (1SF): there is an X such that for all F (if F holds of X, there is a Y such that (X and Y are distinct and F holds of Y too)).

However, al-Fārābī takes the negation of this principle to be the claim that “*everything* [has] a co-participant in everything by which it is characterized” (my emphasis) in (2.a) of T2; this is strictly stronger than the negation of the principle expressed in (1); its negation should instead be

⁴⁴⁴ If we do not allow negative features (and maybe al-Fārābī does not), then this would be an incomplete expression of the principle of the identity of indiscernibles. The complete expression would have at the end additionally “or F holds of Y but does not hold of X.”

expressed as “*something* has a co-participant in everything by which it is characterized.” If we semi-formalize the claim expressed in (2.a), we get:

(2.aSF): For all X, for all F, (if F holds of X, then there is a Y such that (X and Y are distinct and F holds of Y too)).

In T2 al-Fārābī infers (2.b) from (2.a), but (2.b) is also strictly stronger than (2.a) (assuming that there are at least two distinct things in our domain of discourse). In (2.b) he states that nothing is differentiated from anything else by any feature it has, in other words, all things are completely indiscernible. If we semi-formalize this claim, we get:

(2.bSF): For all X, for all F, (if F holds of X, then for all Y (F also holds of Y)).

In T2 (3), al-Fārābī infers the unacceptable conclusion and hence completes the *reductio* argument. If there is no differentiation whatsoever, i.e., if all things are completely indiscernible, al-Fārābī infers that “the *ma ‘nā* of being [*al-mawjūd*] would have no co-participant, and it would indeed be invalid [*yabṭulu*] that it has a name and a named, and conversation [*munāṭaqa*] and expressing oneself [*‘ibāra*] would be invalid, too.” First of all, the claim that there would be no conversation and expressing oneself in that case is taken to be unacceptable by the audience of the argument because this would be a pragmatic contradiction. We are having a conversation and we are expressing ourselves even when we argue that we do not. Furthermore, it seems that conversation and expressing oneself presumes that an expression and what it expresses are distinct things. If we can somehow show that such a distinction is completely obliterated, with this we would also show that there is no conversation and expressing oneself. But how does al-Fārābī infer that there would not be any distinction between an expression and what it expresses if nothing were differentiated from anything in any respect? It seems that al-Fārābī assumes the principle of the identity of indiscernibles whose stronger version he set out to justify in this *reductio* argument. If nothing were differentiated from anything in any respect, i.e., if all things are completely indiscernible, al-Fārābī seems to infer from this that there would be only one single thing; if there is a single thing, not multiple things, there is no distinction between an expression and what is expressed either; in such a strong monism, there are no distinct things but only one single thing. So, when al-Fārābī says that “the *ma ‘nā* of being [*al-mawjūd*] would have no co-participant [*lā qasīm lahu*],” he seems to mean that there are no multiple things that co-participate in being, i.e., there are no multiple beings. Although I think that this idea can be

obtained from this sentence as it stands in the mss., we might also consider emending the *lahu* into *fīhi*; in that case, it would be even clearer that in that case there would be no co-participants in the *ma 'nā* of being.⁴⁴⁵

Finally, at the end of T2, al-Fārābī adds, “[i]n this regard, it is equivalent [*musāwīq*] to that which is circumscribed by a certain quiddity, for it is circumscribed only by that in which it has no co-participant.” I will talk about this claim in greater detail below,⁴⁴⁶ but for the moment what I want to emphasize is implied by the second clause, namely, “it is circumscribed only by that in which it has no co-participant.” In other words, X is said to be circumscribed by Y only if X has not co-participant in Y. That is to say, circumscription by something requires being unique in that thing. In light of this, X is circumscribed by a quiddity only if X has that quiddity uniquely. It seems that being unique in something is also a sufficient condition for circumscription in that thing but of course the meaning of circumscription does not completely reduce to being unique, and al-Fārābī does not say anything to suggest that it does.

c. Quiddity in “one by virtue of circumscription by a quiddity” and the extension of this sense of unity

So, X is circumscribed by Y just in case X is unique in Y. In particular, X is circumscribed by a quiddity just in case X has that quiddity uniquely. There are three related issues about the sense of unity by virtue of circumscription by a quiddity that need to be addressed. The first issue is what sort of quiddities we are talking about. As I mentioned above, the full statement of something’s being one in one of the senses of unity by virtue of circumscription goes something like “X is one by virtue of being circumscribed from Ys (*munḥāz ‘an*) by Z (*bi-*).” We saw that although “circumscription” does not simply mean being unique, uniqueness is necessary and sufficient for the application of “circumscription” in these contexts. In the formulation above, we have three variables. Z stands for the proper extremity, the proper place, or the quiddity, corresponding to the three senses of unity by virtue of circumscription that al-Fārābī discusses in

⁴⁴⁵ The argument that strong monism obliterates the distinction between an expression and what it expresses and leads to an unacceptable conclusion seems to have its earliest representative in Plato’s *Sophist* 244c-d. For a more extensive discussion of *KW* 26 and other related passages from al-Fārābī dealing with monism, see Rosabel Ansari’s forthcoming book “Language and Being in al-Fārābī” (Oxford University Press).

⁴⁴⁶ See Subsection e below.

KW. In the case of the one by virtue of circumscription by a quiddity, answering the question “over what does X range” is to answer the question of the extension of the sense of unity by virtue of circumscription by a quiddity. This is the second issue. The third issue is about the range of Y: as I mentioned above, X is circumscribed by a quiddity just in case X is unique in this quiddity, i.e., does not have a co-participant (*qasīm*) in this quiddity; but among what does X have no co-participant? In other words, what is the relevant class such that we claim that among the things in this class, X is the only thing which has that quiddity? This is a different way of asking for the range of Y according to the locution above.

These three issues are related. Let me begin with the first issue. When al-Fārābī first presents the sense of unity by virtue of circumscription by a quiddity in *KW* 17, he says,

T3 *KW* 17 51.5-7 = 50.1-2

وأيضاً يقال الواحد على المنحاز بماهيته، أي ماهية كانت، منقسمة أو غير منقسمة، كانت متصورة أو كانت خارج النفس.

Also, ‘one’ is said of that which is circumscribed by its quiddity, whatever quiddity it may be, divided or undivided, whether conceptualized [*mutaṣawwara*] or extramental [or outside the soul, *khārija al-naḥs*].

I talked about the divided and the undivided quiddities sufficiently in Chapter 1 section 6; as mentioned there, al-Fārābī seems to hold that the following three claims are equivalent: (1) X has an undivided quiddity; (2) X does not have a cause by which it subsists (*qiwām*); (3) X is identical to its *wujūd*, i.e., its (undivided) quiddity.

As also mentioned in Chapter 1 Section 6, al-Fārābī distinguishes two main senses of being in *KH*: being *qua* true (*ṣādiq*) and being *qua* circumscribed by an extramental quiddity, or simply, *qua* having an extramental quiddity. I talked about the one-place and the two-place cases of both senses of being. Al-Fārābī says about the sense of being *qua* true that being (*mawjūd*) in this sense is “said of every judgement [*qaḍiyya*] such that what is understood [*maḥfūm*] from it is the same outside the mind [*khārija al-naḥs*] just as it is understood, and in general of each of what is conceptualized [*mutaṣawwar*] and imagined [*mutakhayyal*] in the mind and of each of what is intellectually grasped [*ma‘qūl*] if it is outside the mind as the same thing just as it is in the mind” (*KH* 88 116.3-5). As briefly explained in Chapter 1 Section 6, in the two-place cases, “(every /

some) *P mawjūd Q*” holds, in this sense of being, just in case (every / some) thing that is described as “*P*” is also described as “*Q*,” in the one-place cases, “*P mawjūd*” holds just in case there is something which is described as “*P*,” in other words, this mental representation or concept, i.e., this *mutaṣawwar* thing (in the broad sense of the term) is instantiated. On the other hand, when being (*mawjūd*) in the sense of being *qua* circumscribed by an extramental quiddity is said of a thing, “by this it is meant that it is circumscribed by an extramental quiddity [*māhiyya^{tin} mā khārija al-nafs*] whether it has been conceptualized [*tuṣuwwira*] in the mind or it has not been conceptualized” (*KH* 88 116.7). As I discussed in Chapter 1 Section 6, there are some difficulties with the interpretation of the two-place cases of this sense of being, but the one-place cases are relatively clear, and we only need the one-place cases for our current purpose. Accordingly, “*P mawjūd*” holds, in this sense of *mawjūd*, just in case “*P*” picks out a real thing in respect of its quiddity. As also explained in Chapter 1 Section 6, negative expressions, or their counterparts in mental representations, provide good examples of cases where “*P mawjūd*” according to the sense of *mawjūd qua* true come apart from “*P mawjūd*” according to the sense of *mawjūd qua* having an extramental quiddity. If we consider a room in which there is only one human, Socrates, “the non-cat *mawjūd*,” or to paraphrase it in more colloquial English, “there is something which is not a cat” holds according to the sense of being *qua* true because there is indeed something which is not a cat (in the context of this room), namely Socrates. However, “the non-cat *mawjūd*” does not hold according to the sense of being *qua* having an extramental quiddity because “the non-cat,” or more colloquially, “what is not a cat” does not pick out Socrates in respect of his quiddity. Socrates’ quiddity is his humanity, or something along these lines, and I will say more about what this means below, but his quiddity is not being a non-cat. In fact, being a non-cat is not a *feature of reality*, strictly speaking, because negation is only an operation of the mind on thoughts or mental representations, and nothing has an extramental quiddity of being a non-cat; instead, there are extramental quiddities of positive features, like being a cat, and we can form a mental representation which is the negation of the mental representation of this quiddity.

This is one way in which “*P mawjūd*” according to the sense of being *qua* true and “*P mawjūd*” according to the sense of being *qua* having an extramental quiddity come apart, but there is another way in which they come apart. We saw above that al-Fārābī puts it explicitly at *KH* 88 116.6-7 that the sense of *mawjūd qua* being circumscribed by an extramental quiddity holds

whether we have already conceptualized, i.e., represented in our minds this extramental quiddity or not. Of course, in order for *me* to make the claim, e.g., “a human *mawjūd*” in the sense of being *qua* circumscribed by an extramental quiddity as a meaningful and correct claim, I should be using the expression “human” correctly, i.e., as symbolizing the mental representation of a human *qua* human that I have, and this mental representation *is*, or chiefly contains, the conceptualization or the mental representation of the quiddity of the human. So, if someone makes a claim like “P *mawjūd*” in the sense of being as having an extramental quiddity as a meaningful and correct claim, this person must already have a mental representation of the relevant extramental quiddity. However, there is a sense in which “*mawjūd*” in the sense of being *qua* having an extramental quiddity applies to something which has an extramental quiddity even if it has not been conceptualized by anyone yet. For the sake of argument, let’s assume that there is an animal kind which has not been discovered by anyone yet. I am correct in claiming that every animal kind has its extramental quiddity, including this animal kind, and the animals in this yet-to-be-discovered kind are also in a sense included in the extension of “*mawjūd*” in the sense of being *qua* having an extramental quiddity, even though no one has yet formed a mental representation of their quiddities yet, because the important thing about this sense of being is that what is said to be *mawjūd* according to this sense has an extramental quiddity. As also mentioned in Chapter 1 Section 6, Menn points out that the sense of being *qua* having an extramental quiddity seems to apply *directly* to extramental things; by contrast, the sense of “*mawjūd*” as true seems to be a second *ma‘qūl*, i.e., applying directly to another *ma‘qūl* (thought, generally speaking, i.e., a mental representation) rather than applying directly to a real entity or feature or state of affairs.⁴⁴⁷ In any case, it is clear that the important thing about “*mawjūd*” in the sense of being *qua* true is that there is a correspondence between a certain mental representation and what it tries to refer to, i.e., that a certain mental representation is instantiated; so “*mawjūd*” in this sense cannot apply if there is not already a relevant mental representation. On account of these observations, al-Fārābī says,

T4 KH 91

وظاهر أن كل صادق فهو منحاز بماهية ما خارج النفس. والمنحاز بماهية ما خارج النفس هو أعم من الصادق لأن
 <ما هو> منحاز بماهية ما خارج النفس إنما يصير صادقا إذا حصل متصوِّرا في النفس، وهو من قبل أن يُتصوَّر

⁴⁴⁷ Menn, *Al-Fārābī’s Kitāb al-Ḥurūf*, 76-84.

منحاز بماهية ما خارج النفس وليس يُعدّ صادقا. وإنما معنى الصادق هو أن يكون المتصور هو بعينه خارج النفس كما تُصور، وإنما يحصل الصدق في المتصور بإضافته إلى خارج النفس، وكذلك الكذب فيه. فالصادق بما هو صادق هو بالإضافة إلى ما هو منحاز بماهية ما خارج النفس. والمنحاز بماهية ما على الإطلاق من غير أن يُشرط فيه هو أعم من الذي هو منحاز بماهية <ما> خارج النفس. فإن الشيء قد ينحاز بماهية متصورة فقط ولا تكون هي بعينها خارج النفس، أو كانت منها أشياء معقولة متصورة ومتخيلة ليست بصادقة، كقولنا 'القطر مشارك للضلع' وكقولنا 'الخلاء'، فإن الخلاء له ماهية ما، وذلك أنا قد نسأل عن الخلاء 'ما هو' ويجب فيه بما يليق أن يجاب في جواب 'ما هو الخلاء' ويكون ذلك قولاً شارحاً لاسمه وما يشرح الاسم فهو ماهية ما <وليست> خارج النفس.

[1] It is clear that each thing which is true is circumscribed by an extramental quiddity, but what is circumscribed by an extramental quiddity is more general than what is true because what is circumscribed by an extramental quiddity becomes true only when it obtains as conceptualized in the mind, while before it is conceptualized it is circumscribed by an extramental quiddity but is not considered to be true. [2] The meaning of the true is nothing but that what is conceptualized is the same outside the mind just as it was conceptualized, and the truth about what is conceptualized obtains only by virtue of its relation to [what is] outside the mind, and similarly with the falsity about it. So, the true insofar as it is true is by the relation to what is circumscribed by an extramental quiddity. [3] And what is circumscribed by a quiddity, simpliciter and without any condition being imposed on it, is more general than that which is circumscribed by an *extramental* quiddity. For something might be circumscribed by a conceptualized quiddity [*bi-māhiyya mutaṣawwara*] only, while [this quiddity] is not the same outside the mind, or among [such things] there are things which are intellectually grasped, conceptualized, or imagined while being false, as in our statement 'the diagonal is commensurable with the side,' or in our statement 'the void,' for the void has a certain quiddity, that is to say, we might ask about the void 'what is it?', and one can give as an answer to [this question] whatever is appropriate to give an answer to the question of 'what is the void?', and that is a formula explaining its name [*qawlan shāriḥan li-smihi*, i.e., the nominal definition], and what explains the name is a certain quiddity which is not outside the mind.

In T4 (1), al-Fārābī asserts that the sense of being *qua* circumscribed by an extramental quiddity is strictly more general than the sense of being *qua* true because the former applies to something

which has an extramental quiddity even before it is conceptualized but the latter applies only after it is conceptualized. To justify this claim, in T4 (2), al-Fārābī reminds the reader that the sense of being *qua* true applies because of the correspondence between something which is conceptualized and an extramental thing it tries to refer to. As Menn points out, the claim in (1) is not true without a qualification because there are some cases where being *qua* true holds but being *qua* having an extramental quiddity does not hold. Al-Fārābī implies in *KH* 240 that the one-place claims with negative and primitive expressions are like this (e.g., as I reminded above, “the non-cat *mawjūd*” in the sense of being *qua* true holds but “the non-cat *mawjūd*” in the sense of being *qua* having an extramental quiddity does not hold).⁴⁴⁸

In (1), al-Fārābī seems to talk about the conceptualization of the thing which is said to be *mawjūd* (observe the masculine singular in “*mutaṣawwar*,” “*yutaṣawwaru*,” and “*tuṣuwwira*”), but in (2) he explicitly talks about conceptualized quiddities (*māhiyya mutaṣawwara*). I will talk below more about al-Fārābī’s account of how we conceptualize or how we form thoughts (*ma’qūl*) of an extramental thing or an extramental quiddity in *KH*.⁴⁴⁹ For now, I just want to remark that it stands to reason that one way to obtain a conceptualized quiddity is to conceptualize an extramental quiddity, i.e., to form a mental representation of this quiddity. As al-Fārābī makes it clear in T4 (3), though, this is not the only way in which we have a conceptualized quiddity; rather, and perhaps more interestingly, we can have a conceptualized quiddity which is not simply a mental representation of a real extramental quiddity. In fact, such *merely* conceptualized quiddities are not instantiated at all, and hence, things with such quiddities are not (*ghayr mawjūd*) in the sense of being false because there is nothing real that corresponds to such quiddities (they are also *ghayr mawjūd* in the sense of not having an extramental quiddity because they do not have extramental quiddities). As al-Fārābī claims at the beginning of (3) that being circumscribed by a quiddity without any specification of what this quiddity is is more general than being circumscribed by an *extramental* quiddity, by “conceptualized quiddity” here

⁴⁴⁸ Menn, *Al-Fārābī’s Kitāb al-Hurūf*, 79-80. As Menn suggests, although in *KH* 240 al-Fārābī only mentions the cases with privation to illustrate that sometimes the one-place *mawjūd* claim in the sense of being *qua* true holds but the same claim in the sense of being *qua* having an extramental quiddity does not hold, the cases with accidental compounds also seem to be like this; e.g., “the white cat *mawjūd*” in the sense of being *qua* true holds just in case there is a white cat here, but “the white cat *mawjūd*” in the sense of being *qua* having an extramental quiddity never holds because although white and cat have their quiddities separately, there is no single extramental quiddity which is the quiddity of whiteness in a cat.

⁴⁴⁹ See Subsection f. below.

in (3) al-Fārābī seems to mean chiefly merely conceptualized quiddities in contrast with extramental quiddities. To illustrate things with merely conceptualized quiddities, al-Fārābī mentions “the diagonal is commensurable with the side,” and “the void.” Since al-Fārābī seems to talk about a thing which has a merely conceptualized quiddity here, like the void, and not a proposition (*qaḍiyya*), it would make more sense for him to mention here “the diagonal *which* is commensurable with the side,” and perhaps we should emend the corresponding Arabic expression as “*al-quṭr <al->mushārik al-ḍil*” to reflect this. In any case, al-Fārābī talks in detail only about the void here. Aristotle argues in *Phys. IV* that the void does not exist, and al-Fārābī follows him on this point. That said, we have a conception of the void, be it “a place without a body in it” or something along those lines, and we can successfully talk about the void, and even when we want to argue that the void is not a real thing, we must use the correct conception of the void so that an opponent cannot blame us for showing the non-existence of something else and wrongly calling it “the void.” Whatever is the correct answer to the question of “what is the void” is the nominal definition (*qawl shāriḥ li-smihi*) of the void, and as al-Fārābī puts it explicitly, the nominal definition (or more strictly, the mental representation that the nominal definition represents) is the *merely* conceptualized quiddity of the void, and there is no single extramental quiddity of which this quiddity is the conceptualization or mental representation. Although al-Fārābī does not address here how we form such merely conceptualized quiddities, if he was asked about this, he would probably say that we form them ultimately by putting together the thoughts (*ma`qūlāt*) we form directly of extramental things. So, when we combine the thought of the place and the privation of the thought of the body, we obtain the merely conceptualized quiddity of the void.⁴⁵⁰

I spoke of “things” when I talked about the likes of the void. In fact, I am following al-Fārābī’s terminology when I call the likes of the void “things” (*ashyā*). Al-Fārābī characterizes and briefly discusses what “thing” (*shay*) means in *KH* 104-5. He says that “‘thing’ [*al-shay*] can be said of everything that has a quiddity, however it might be, whether extramental or conceptualized in whatever way, whether divided or undivided. For when we say ‘this is a thing’ we mean by this that it has a certain quiddity. So, ‘being’ [*mawjūd*] is said only of what has an extramental quiddity and is not said of a merely conceptualized quiddity. For this reason, ‘thing’

⁴⁵⁰ More on the nominal definition (*qawl shāriḥ al-ism*) and things like the void which have only a nominal definition, see *KH* 169, and the *Book of Demonstration*, 80.

is more general than ‘being’... And by ‘not a thing’ [*laysa bi-shay*] what does not have a quiddity at all is meant, neither an extramental quiddity, nor [a quiddity] in the mind.” (*KH* 104-5, 128.6-10, 17-8). Accordingly, the void is not a real thing, and its quiddity is not instantiated either. So, the void is *ghayr mawjūd* according to either sense of being (*KH* 95 121.7-14). But the void is a *shay*’ because we call whatever has a quiddity a *shay*’, whether it is an extramental quiddity or a quiddity which is only in the mind, i.e., merely conceptualized.

As al-Fārābī puts it clearly in T4 (3), there are things which are “circumscribed by a conceptualized quiddity [*bi-māhiyya mutaṣawwara*] only,” and the void is an example of this. Recall that at the beginning of *KW* 17 which is quoted as T3 above, al-Fārābī says that the sense of unity by virtue of circumscription by a quiddity applies to something which is circumscribed by a quiddity, “whatever quiddity it may be, divided or undivided, whether conceptualized or extramental.” As I mentioned above, the mental representation of an extramental quiddity can also be called a conceptualized quiddity, namely the conceptualization of that extramental quiddity. In this case, perhaps we can say that what is circumscribed by the conceptualized quiddity of humanity (and what is said to be one in this sense) is the real human kind, i.e., that ‘slice’ or ‘aspect’ of reality by virtue of having which both Socrates and Plato are said to be human. Or perhaps, we should say that what is circumscribed by the conceptualized quiddity of humanity (and is said to be one in this sense) is the *species* of humanity. As al-Fārābī puts it clearly in *KH* 7, being a genus and being a species are second thoughts (*ma ‘qūlāt thawānī*). In other words, “species” applies not directly to an extramental thing or feature but to a thought or a mental representation, e.g., of the real feature of being a human insofar as this mental representation is considered a mental representation of a certain sort (say, insofar as it is predicated of many things, i.e., it is a universal, in respect of what it is and is the most specific universal of this sort). So, according to this understanding, what is circumscribed by the conceptualized quiddity of humanity is the mental representation of humanity which we call a species.

So, in the case of the conceptualized quiddity of an extramental quiddity, what is said to be one by virtue of being circumscribed by this quiddity is either, e.g., the real human kind, or the mental representation of humanity, i.e., the species of humanity. As we saw above, “conceptualized quiddity” can also refer to a *merely* conceptualized quiddity. In this case, what is

circumscribed by this quiddity (and is said to be one in this sense) cannot be a real thing or feature because there is no such a real thing or feature. For example, the void is circumscribed by its conceptualized quiddity. The void is one in the sense of unity by virtue of circumscription by that quiddity. So, it seems that the extension of unity by virtue of circumscription includes all the real entities and features (*mawjūdāt*) because something is *mawjūd* as a real, extramental entity or feature just in case it is circumscribed by its extramental quiddity. But insofar as it is circumscribed by its quiddity (which is, in this case, an extramental quiddity), it is also one in the sense of unity by virtue of circumscription by a quiddity. However, we saw that this sense of unity applies not only to extramental real entities and features but also to mental things (or however we want to call them); as I suggested above, perhaps mental entities like the human species is said to be one in this sense. In any case, this sense of unity applies to *merely* mental entities like the void. As we saw above, al-Fārābī asserts in *KH* 104 that whatever has a quiddity, whether it is divided or undivided, extramental or conceptualized, it is said to be a “thing” (*shay*). So, “one” in the sense of unity by virtue of circumscription by *a quiddity*, without the specification of what sort of quiddity we talk about, is coextensive with “thing,” while more specifically, “one” in this sense applying to things which are circumscribed by an *extramental* quiddity is coextensive with “being” (*mawjūd*) in the real, extramental sense of being, i.e., *qua* circumscribed by or *qua* having an extramental quiddity; in fact, “one” and “being” in these senses are *necessarily* coextensive because they apply to something by virtue of *the very same fact*, namely that it is circumscribed by its (extramental) quiddity. In Section 3, I will talk more about the connection between these senses of unity and being, but my present concern is to get clear on the extension of the sense of unity by virtue of circumscription by a quiddity.

It is philosophically useful to have a theory of individuation of mental things, even for the *merely* mental things like the void because we distinguish such things and we quantify over them. When someone presents an argument to show that there is no void, it is different from the argument to show that there is no diagonal of a square which is commensurable with its side, and we would ordinarily say that these two arguments are different arguments because the void and the diagonal of a square commensurable with its side are different things: the void is one thing, and such a diagonal is another thing. What distinguishes the two is that the void has its nominal definition while such a diagonal has its own nominal definition different from the nominal definition of the void or the nominal definition of any other merely mental thing. In other words,

it seems natural to say that what individuates such merely mental things are their merely conceptualized quiddities, and saying that, e.g., the void is one by virtue of being circumscribed by (its merely conceptualized) quiddity captures this.

As I argued so far, al-Fārābī *should* say that this sense of unity is (minimally) coextensive with “thing” and that the extension of “being” (*mawjūd*) is a proper subset of the extension of “thing.” This is not exactly the point al-Fārābī makes in *KW*, but he makes a similar point. Al-Fārābī states in *KW* 17 about the sense of unity by virtue of circumscription by a quiddity that “it is in the nature of ‘one’ in this sense that it is equivalent [*yusāwīqa*] to ‘being’ [*al-mawjūd*], just like ‘thing’ [*al-shay*], for there is no difference between saying ‘each thing’ and ‘each one’ [*lā farq bayna an yuqāla ‘kull shay’ min al-ashyā’ wa-bayna an yuqāla ‘kull wāḥid’*]” (51.8-10 = 50.3-5). It seems that al-Fārābī takes “*mawjūd*” and “*shay*” to be interchangeable here because after he says that “one” in this sense is equivalent to (i.e., minimally coextensive with) “being,” he adds, “just like ‘thing’ [*mithla al-shay*],” and although we expect al-Fārābī to say something like “there is no difference between saying ‘each being’ [*kull mawjūd*] and ‘each one’,” he actually says “there is no difference between saying ‘each thing’ [*kull shay’ min al-ashyā’*] and ‘each one’.” Al-Fārābī seems to use “*mawjūd*” and “*shay*” interchangeably or at least as coextensive terms in two other parallel passages in *KW* too. In *KW* 64, after saying that the senses of unity by virtue of circumscription by a place and by an extremity only apply to bodies (*jism*), al-Fārābī adds that “that which is circumscribed by a certain quiddity may or may not be a body,⁴⁵¹ indeed, it is general just like ‘thing’ and ‘being’ [*mawjūd*]” (78.1-2 = 65.5-6). It seems to be implied in this sentence that “one” in this sense, “being” in the corresponding sense, and “thing” are all coextensively the most general terms. Also, al-Fārābī seems to treat “being” and “thing” at least as coextensive terms in his summary account of the sense of unity by virtue of circumscription by a quiddity towards the end of *KW*:

T5 *KW* 94 101.13-102.2 = 81.1-5

⁴⁵¹ The mss. have “... *jisman wa-ghayr jism*” at line 1 = 5, and Martini Bonadeo and her team keep this reading, but apparently on account of the sense of the sentence, Mahdi emends this “*wa*” into “*aw*.” I think the mss. reading can also yield the same sense and the emendation is not strongly needed.

ويقال الواحد على كل ما انحاز بماهية تخصه ووجود يخصه وينحاز⁴⁵² عن كل ما سواه فيكون واحدا بوحدة هي التي بها انحاز [بأجزائه]⁴⁵³ عن غيره، وإذا كان كل شيء إنما تتحاز ماهيته عن غيره ببعض المقولات وكان مساويا للموجود الدال على المقولات وعلى كل ما له ماهية ما⁴⁵⁴ فيكون⁴⁵⁵ أيضا مساويا للشيء

[1] ‘One’ is also said of all that is circumscribed by a quiddity proper to it and a being [wujūd] proper to it, and it is circumscribed from everything else. So, it is one by virtue of a unity by virtue of which it is circumscribed from other things. [2] If the quiddity of each thing is circumscribed from what is other than it only by some of the categories, and [3] it is equal [musāwīyan] [in extension] to ‘being’ [mawjūd] which denotes the categories and each of what has a certain quiddity, then [4] it is also equal [in extension] to ‘thing’.

I will briefly talk about (1) and (2) below,⁴⁵⁶ but for now I just want to focus on (3) and (4). First of all, we have *musāwin* twice in (3) and (4) apparently in the sense in which *musāwīq* is used in *KH* 17 and 26 where it means, minimally, coextensiveness but presumably an equivalence

⁴⁵² وينحاز is the reading of MSS. B and C while MS. A has ينحاز. Martini Bonadeo and her team follow the reading of MSS. B and C. Mahdi, on the other hand, follows the reading of MS. A, and to provide a smoother reading he adds به after it. I follow Martini Bonadeo and her team, but Mahdi’s reading can be correct too. In any case, the sense of the sentence does not change.

⁴⁵³ This expression is in all three mss. and Martini Bonadeo and her team keep it in their edition. By contrast, Mahdi proposes to excise it, presumably because in no other place in *KW* where al-Fārābī talks about this sense of unity, he mentions that the thing which is said to be one in this sense is circumscribed from other things “by its parts [bi-ajzā’ihī]” and it is not easy to understand what al-Fārābī could mean if he actually wrote this expression. Perhaps we can take the bi- in this expression to mean “with” and then it would mean that X is circumscribed from other things along with its parts, i.e., a whole is not circumscribed from its parts but is circumscribed from things other than its parts, but it seems that a human as a whole is circumscribed from, e.g., his hand by his quiddity because the quiddity of a human is different from the quiddity of his hand. Perhaps, we should think of the relevant whole as, e.g., the human species and its parts as individual humans; it might seem that the human species is circumscribed by humanity, but the human species is not circumscribed from individual humans by humanity, but rather by humanity the human species is circumscribed along with the individual humans from other species and the individuals in the other species. But even though this interpretation makes some sense, it seems forced to me. So, I think it more likely that بأجزائه as we have in the mss. is a corruption of بانحيازه and this was a later gloss. If we want to keep an expression here, we can emend بأجزائه into بانحيازه and then this clause would mean “it is one by virtue of a unity by virtue of which it is circumscribed by its circumscription from other things.”

⁴⁵⁴ Mahdi omits this ما له ماهية ما after ما على كل ما at line 1 = 4 which is in all three mss. and Martini Bonadeo and her team restore this phrase.

⁴⁵⁵ The mss. have ويكون here. Mahdi prints يكون but his emendation is possibly motivated by his omission of the preceding expression (له ماهية ما). Martini Bonadeo and her team emend it into فيكون, apparently taking this to be the beginning of the apodosis. At least I take this to be the beginning of the apodosis, adopting their emendation. If we keep the reading in the mss., the إذا at p.101 line 16 = line 3 should be taken to mean “therefore,” but then it would be somewhat awkward to have two past tense copula كان as the main verb at p.101 line 16 = line 3 and p.102 line 1 = line 4, and then a present tense copula ويكون at line 2 = 5. In any case, even if we keep the mss. reading, the point I make above stands.

⁴⁵⁶ See Subsection e below.

stronger than mere coextensiveness (i.e., some sort of necessary coextensiveness). On account of this, Menn suggests that these two instances of *musāwin* should probably be corrected into *musāwiq*.⁴⁵⁷ This might be right, but as Menn also points out in the same place, we might as well keep the mss. readings of *musāwin* to get more or less the same sense. In many places, al-Fārābī uses the expression “equal (*musāwin*)” or some related expression to express coextensiveness.⁴⁵⁸

In (3) al-Fārābī states that “one” in the sense of unity *qua* circumscribed by a quiddity is (minimally) coextensive with “*mawjūd*” in the sense of *mawjūd* denoting the categories and denoting whatever has a quiddity. The sense of being as divided into the categories is a main *per se* sense of being in *Met.* Δ.7. As I mentioned in Chapter 1 Section 6, in the *KH* account of the senses of being that ultimately derives from Aristotle’s account of the senses of being in *Met.* Δ.7, al-Fārābī initially distinguishes three senses of being: 1. being as divided into the categories, 2. being *qua* true, and 3. being *qua* circumscribed by an extramental quiddity; but then, al-Fārābī argues that the first case reduces to the third case so that we end up with two main senses of

⁴⁵⁷ Menn, *Al-Farabi’s Metaphysics* Section 3.6 n.36.

⁴⁵⁸ For example, in a short introduction to logic treatise called *Introductory Treatise*, al-Fārābī talks about compound predicates (*maḥmūl murakkab*), and in particular he says that if a predicate combined of a genus and a differentia or multiple differentiae is “equal in predication [*musāwiyan fī al-ḥaml*]” to a species, this compound predicate is called the definition (*ḥadd*) of that species (v.1 p.61 lines 17-8); likewise, if a predicate combined of a genus and a proprium or of a genus and one or more accidents is “equal in predication” to a species, this compound predicate is called the description (*rasm*) of this species (p.62 lines 2-4); if a predicate combined of accidents is “equal [*musāwiyan*]” to a species, it is also called the proprium (*khāṣṣa*) of this species (p.62 lines 9-11). Al-Fārābī uses similar expressions to express coextensiveness in his other logical works too. For example, in his short commentary on / paraphrase of the *Isagoge*, he states that when we combine the genus and the differentia of a species and get the definition of this species, the species usually also has a name (*ism*) which “is equal to it [sc., the definition] in denotation [*yusāwīhu fī al-dalāla*]” (v.1 p.80 line 22 - p.81 line 1); he says that “the proprium is equal [*tusāwī*] to the species whose proprium it is” (p.83 line 15-6); he also says that “the definition [or more properly, definiens] is equal in predication to the definiendum [*al-ḥadd musāwin li-l-maḥdūd fī al-ḥaml*]” (p.86 lines 19-20). “*Musāwin*” and the related terms are used to express coextensiveness in many places in *Expressions Used in Logic* too; let me mention just one passage where al-Fārābī seems to use *mutasāwin* and *mutasāwiq* to express the same idea: al-Fārābī says that if two universals can be predicated of the same individual, they are said to participate in being predicated (*tashtariku fī al-ḥaml*) of that individual (12), and if of two such participating universals, one is not more general than the other (and hence the second is not more specific than the first), they are said to be “equal to each other in predication and equivalent to each other in predication [*al-mutasāwiya fī al-ḥaml wa-l-mutasāwiqa fī al-ḥaml*]”; for example the animal is more general than the human and the human is more specific than the animal, but “the animal and the perceptive [*al-ḥassās*] are equal to each other and equivalent to each other in predication [*mutasāwiyan wa-mutasāwiqān fī al-ḥaml*]” (13, p.61 lines 9-13). Al-Fārābī uses some other terms to express coextensiveness too. For example, he also uses “to convert (*yan ‘akisu*)” for this purpose. These or some other related terms can be found in the Arabic translations of Greek philosophical works too. In particular, Aristotle sometimes uses *ison* or related terms to express coextensiveness, and these often get translated into Arabic using some terms derived from the root *s-w-y* expressing equality (for example, in Abū Bishr’s translation of *APo.*, *ep’ison*: *bi-l-tasāwī* (99a20), *ison*: *musāwin* (99a25); in al-Dimashqī’s translation of *Top.*, *ep’isōn*: *bi-l-sawā’* (121b4), *ep’isōn*: *bi-l-tasāwī* (121b8), *ep’isēs*: *‘alā al-tasāwī* (122b38, 39), *ep’ison*: *bi-l-sawīyya* (126a1); also in al-Dimashqī’s translation of the *Isagoge*: *to episēs metechesthai*: *tashtariku bi-l-sawīyya* (18.11, 19.5)).

being (*KH* 88-90). So, when al-Fārābī talks about “*mawjūd* which denotes the categories,” he should mean the sense of being *qua* circumscribed by an extramental quiddity, and as we saw, it trivially holds that something is said to be *wāḥid* by virtue of being circumscribed by (an extramental) quiddity just in case it is said to be *mawjūd* by virtue of being circumscribed by an extramental quiddity. However, al-Fārābī also says in T5 (3) that “*mawjūd*” here also denotes whatever has a quiddity (*kull mā lahu māhiyya^{um} mā*). Recall that this is precisely how al-Fārābī characterizes “*shay*” in *KH* 104 and there he explicitly states that “*shay*” is strictly more general than “*mawjūd*” in the sense of having an extramental quiddity because, e.g., the void has a quiddity too and is thus a *shay*, but it is not *mawjūd* in the sense of having an extramental quiddity because it has *only* a conceptualized quiddity. So, it seems that here al-Fārābī restricts what has a quiddity to things which have extramental quiddities. So, al-Fārābī’s claim in (4) that “one” in this sense is also coextensive with “*shay*” seems to imply that when the quiddities are restricted to extramental quiddities, “*shay*”, “*mawjūd*” in the relevant sense, and “*wāḥid*” in the relevant sense are all coextensive in that these three terms apply to all and only what has an extramental quiddity, i.e., all real entities and features (*mawjūdāt*).

If al-Fārābī thought that it was important to emphasize that “thing” has a strictly greater extension than “being” in the sense of being circumscribed by an extramental quiddity, and that “one” in the sense of being circumscribed by a quiddity is (minimally) coextensive with “thing,” we would expect him to indicate that in the three passages in *KW* discussed above. So, al-Fārābī does not seem to think that the distinction between “thing” and “being” he makes in *KH* is important in *KW*. It seems that in *KW* al-Fārābī either thinks that the sense of unity by virtue of circumscription by a quiddity applies only to things which have extramental quiddities (so that “conceptualized quiddity” at the beginning of *KW* 17 does not refer to the *merely* conceptualized quiddities, like that of the void, but *only* to the conceptualizations of extramental quiddities and, according to this view, what is circumscribed by the conceptualized quiddity of, e.g., humanity is the extramental feature of humanity, not its mental representation), or al-Fārābī thinks that this sense of unity *primarily* applies to real, extramental entities and features (i.e., *mawjūdāt* according to the sense of being as having an extramental quiddity), and even if it also peripherally applies to mental entities and features, we can ignore them. The second option seems more likely to me.

d. Circumscribed from what? Option I: Socrates is circumscribed not from Plato but only from non-humans⁴⁵⁹

The sense of unity by virtue of circumscription by a quiddity applies primarily to things which have extramental quiddities. In agreement with this, al-Fārābī says in *KW* 17 that this sense of unity “is said of all the categories and of this particular thing [*hādhā mushār ilayhi = tode ti*] and of other things outside the categories [*khārija ‘an al-maqūlāt*] – if indeed there are such things” (51.11-2 = 50.5-6). As I mentioned in Chapter 1 Section 6, there are two kinds of *mushār ilayhi* according to al-Fārābī: those which are not in a subject, i.e., substantial particulars, and those which are in a subject, i.e., accidental particulars. It is also suggested in Chapter 1 Section 6 that the things outside the categories seem primarily to be God and the other theological things, but this is not my main concern here. Rather, what I want to emphasize now is that al-Fārābī makes it clear in the quoted passage that the relevant sense of unity applies to everything in the categories, starting from the categories themselves, all the way down to the individuals under those categories. Recall that the general locution for the sense of unity by virtue of circumscription is “X is circumscribed from Ys by Z.” We saw that the X in the sense of unity by virtue of circumscription by a quiddity also includes particulars, like Socrates and Plato. This raises a difficulty. It appears at first sight that the quiddity is like its formula, i.e., the definition in that just as the definition is universal, the quiddity is also universal. As the term itself suggests, and as we will see more about this below,⁴⁶⁰ the *māhiyya* or literally what-ness of something is cited in response to the question of what that thing is. So, the quiddity of Plato and the quiddity of Socrates are humanity in some sense. If it is the same humanity in both cases, then Socrates would not be circumscribed from Plato by his quiddity because Socrates’ quiddity would be shared by Plato. So, we seem to have two main options: (I.) if it is the case that all the particulars falling under a species have the same quiddity, when we claim that an individual under a species which has multiple individuals, X, is one by virtue of being circumscribed by a quiddity from Ys, these Ys would not refer to everything but would be restricted to things other than the individuals under the species of X. In other words, if, e.g., the same humanity is shared by all individual

⁴⁵⁹ I would like to thank Damien Janos for prompting me to present some of my claims in the following Subsections d, e, and f more clearly.

⁴⁶⁰ See Subsection f below.

humans and is the quiddity of all individual humans, we should not say that Socrates is circumscribed by his quiddity from Plato, or from any other individual human; rather, when we say that Socrates is one by virtue of being circumscribed by a quiddity, we would mean that he is circumscribed from non-human things. Alternatively, (II.) in the case of an individual X, when we say that X is one *qua* circumscribed by a quiddity from Ys, if we mean that it is circumscribed from everything else, including the other individuals under the species of X, then the relevant quiddity of X cannot be shared by anything else, including the other individuals under the species of X. In this case, we have three further sub-options. It might be the case that (II.a) the quiddity by which it is circumscribed is not in every case the quiddity of X, but it is the quiddity of that feature, accidental or essential, in which X is unique according to the interpretation of T3 from *KW* presented above. Recall that according to this interpretation of T3, everything is unique in a feature which might be an essential or an accidental feature. For example, the moon is unique in its essential feature, moonness, but presumably Socrates is unique in an accidental feature it has; let's assume that Socrates is the only thing in this room now. In the case of the moon, the quiddity by which it is circumscribed from everything else is the quiddity of its species, moonness. In the case of Socrates, the quiddity by which he is circumscribed from everything else is the quiddity of that accidental feature which belongs to him and only to him (i.e., the quiddity of the accident of being in this room now as we assumed that only Socrates has this accident). In other words, according to (II.a), the quiddity by which X is circumscribed from everything else is the quiddity of an essential or an accidental feature only X has; this unique feature can be the species for things which are unique in their species (e.g., the moon is unique in its species, moonness), or this unique feature can be an accident for things which have multiple individuals under their species (e.g., we assumed that Socrates is unique in the accident of being in this room now).

Alternatively, it might be the case that (II.b) when we say that, e.g., Socrates is circumscribed from everything else by a quiddity, we do not mean his quiddity, strictly speaking, but we mean his quiddity in conjunction with some accidents such that their conjunction uniquely picks out Socrates. Accordingly, assuming that being a person who was located in a certain place at a certain time picks out Socrates uniquely, when we say that Socrates is one by virtue of being circumscribed by a quiddity, we mean that humanity + being in that place at that time uniquely picks out Socrates and circumscribes him from everything else, including Plato. In both II.a and

II.b, we assume that all the individuals in the same species share the same quiddity so that, e.g., the quiddity of Socrates, which is humanity shared by Plato and all the other individual humans, is not that by which Socrates is circumscribed from everything else, including Plato. According to the last option, (II.c) the quiddity of an individual thing is an individual quiddity which belongs only to that individual thing. In other words, according to this option, the quiddity of Socrates is Socrates' humanity and it is distinct from the quiddity of Plato, which is Plato's humanity, and since only Socrates would have Socrates' quiddity, Socrates would be circumscribed from everything else, including from Plato, by his quiddity.

To put all these options together, when we say that, e.g., Socrates is circumscribed from others by a quiddity, according to Option I, the relevant quiddity is humanity shared by all humans, so Socrates is circumscribed by his quiddity, humanity, *only* from non-humans. According to Option II, Socrates is circumscribed from everything, including other humans. According to Option II.a, humanity is shared by all humans, and the quiddity by which Socrates is circumscribed from everything else including, e.g., Plato is not humanity, but it is the quiddity of some feature that only Socrates has (say the accident of being in this room now). According to Option II.b, humanity is shared by all humans, and the quiddity by which Socrates is circumscribed from everything else including, e.g., Plato is not *just* humanity but it is humanity *plus* some accidental feature only Socrates has (say humanity + being in this room now). According to Option II.c, individuals have their individual quiddities which they do not share with anything else. So Socrates' humanity is not shared by any other human and the quiddity by which Socrates is circumscribed from everything else including, e.g., Plato is *his* humanity which he does not share with anything else including Plato.

As I will argue below, I think that Option I is less likely to represent al-Fārābī's view than Options II.a, b, and c. Also, even though the textual evidence and other relevant philosophical considerations do not support any one of these latter three options over the others unambiguously and with complete agreement, I will explain below my persuasion that if all the textual and philosophical evidence is considered together, Option II.c (i.e., that al-Fārābī is committed to the existence of individual quiddities) should be preferred to the alternatives, namely, Options II.a and II.b.

Option I does not seem to be what al-Fārābī had in mind in *KW*. If al-Fārābī thought that in the case of, e.g., Socrates, Socrates is circumscribed by his quiddity from every non-human but he is not circumscribed from other individual humans, al-Fārābī would have had plenty of occasions to make this point in *KW*, but he does not say anything that suggests such an important restriction of what individuals are circumscribed from by their quiddities. Instead, when he specifies that from which something is circumscribed by a quiddity, he says that it is circumscribed by a quiddity from “other things [*ghayrihi*]” or “things other than itself [*mā siwāhu*]” (*KW* 82 91.13-4 = 74.4-5, *KW* 94 101.13-102.1 = 81.1-3). It is true that these locutions do not need to be taken to refer to everything without any qualification, but it seems that they refer, at least, to all the things of the same sort as the thing which is said to be circumscribed by a quiddity. In other words, perhaps we should not compare apples and oranges, so to speak, but to run with the same metaphor, it seems that al-Fārābī implies that when we talk about an apple’s being circumscribed, we compare it with all the other apples and state that this apple is circumscribed from every other apple. More precisely, al-Fārābī speaks of “what is circumscribed by a certain place from other things [*‘an ghayrihi*]” at *KW* 77 88.15-89.1 = 72.7 and he implies in *KW* 82 = 74.4-6 that what is circumscribed by a place and what is circumscribed by an extremity are circumscribed from other things (*‘an ghayrihā*), but since the senses of unity by virtue of circumscription by an extremity and by a place apply only to bodies, it is unlikely that al-Fārābī means that a body is circumscribed from, e.g., the soul; rather he seems to mean that among the things to which these senses of unity apply, i.e., among the bodies which are actually in place or have actual extremities, a body is circumscribed from every other body of this sort. Similarly, in *KW* 78, about which I will say more below,⁴⁶¹ al-Fārābī talks about the circumscription of a species from other species, e.g., the human species from the other animal species like the horse species by humanity, and more specifically by the differentia (*fāṣl*) of the human species because the genus, animal, is also shared by the other animal species but of the animal species, only the human species has the differentia of humanity (whether it is rationality or something else); al-Fārābī mentions these as examples of “that which is separated [*yanfaridu*] from other things [*‘an ghayrihi*] by a certain quiddity” and he adds that in such cases, “[e]ach of these species is one if it is separated by a certain quiddity proper to it [*takhuṣṣuhu*], and its unity is the differentia by which it is differentiated [*yatamayyazu*] and circumscribed from all that is other than itself [*‘an*

⁴⁶¹ See Subsections e and f below.

kull mā siwāhu]]” (89.5-11 = 72.11-5). So, even though al-Fārābī mentions separation “from other things” and circumscription from “all that is other than itself,” it is clear that he has in mind the comparison between one animal species with the other animal species, or perhaps with all the other species, but he does not seem to compare, e.g., the human species with the individuals in the category of substance or in the other categories. So, when we talk about the circumscription of a body by its extremity or place, we mean that it is circumscribed from other such bodies, and when we talk about the circumscription of an animal species, we mean that it is circumscribed from other animal species, or maybe more generally, from all the other species. So, in the case of, e.g., human individuals, we would expect al-Fārābī to say that, e.g., Socrates is circumscribed immediately from Plato and the other human individuals, (and maybe more generally from the individuals in the other substantial species, and from the individuals in the other categories) and this observation goes against Option I under consideration, according to which we would claim that, e.g., Socrates is circumscribed not from other human individuals, but from the non-human things *only*.

In fact, since the sense of unity by virtue of circumscription by a quiddity applies to everything that has a quiddity, it seems that when we say that something is one by virtue of being circumscribed by a quiddity, most generally speaking, this thing is circumscribed from everything else that has a quiddity. In the review of the senses of unity starting in *KW* 83, al-Fārābī does speak of “what is one by virtue of the fact that it is circumscribed by a certain quiddity from things other than itself among what has a quiddity [‘*ammā siwāhu mim mā lahu māhiyya*]]” (92.7-8 = 74.9-10); this is the most general statement of that from which something is said to be circumscribed by a quiddity. According to this last claim, when we say that X is one by virtue of being circumscribed by a quiddity, X is circumscribed by this quiddity from *everything else that has a quiddity*. If we take this claim literally, it seems that, e.g., Socrates is circumscribed by a quiddity from the human kind too. Even though this claim looks counterintuitive, we can make sense of it if there are individual quiddities. I will explain below what I mean by an individual quiddity, but let me state here that if there are individual quiddities, the quiddity of, e.g., Socrates would not simply be humanity while the quiddity of the human kind would be humanity, and even though humanity is included in or implied by the quiddity of Socrates, the quiddity of Socrates would not simply be identical to humanity; so according to this view, we can make sense of the claim that, e.g., Socrates is circumscribed from the human kind

by his quiddity, and in this regard we can also make sense of the claim that the human kind is circumscribed from Socrates by its quiddity because humanity is not Socrates' quiddity, strictly speaking, even though humanity is included in or implied by the quiddity of Socrates.

In short, it seems that al-Fārābī's considered opinion is one of the following two views where the second view comprehends the first one. He either thinks that when we talk about something's being one by virtue of being circumscribed by a quiddity, it is circumscribed from other things 'like it,' i.e., if it is an individual, it is circumscribed immediately from the individuals under the same species and more generally from all the other individuals, and if it is a kind, it is circumscribed immediately from the other kinds under the same higher kind (i.e., the human kind from the other animal kinds) and more generally from all the other kinds; or he thinks that when we say that something is one by virtue of being circumscribed by a quiddity, it is circumscribed from everything else which has a quiddity, whether it is an individual, or a kind. In either case, it seems that contrary to Option I, al-Fārābī does not hold that, e.g., Socrates is circumscribed not from Plato and the other individual humans but only from non-human things.

e. Option II.a: Circumscribed by a quiddity = circumscribed by some feature, essential or accidental

So, if Option I is unlikely because, e.g., Socrates is circumscribed from Plato and the other individual humans (and other things), this leads us to Options II.a, II.b., and II.c. It is common to all these three views that an individual is circumscribed by a quiddity from other individuals under the same species. Options II.a and II.b assume that the quiddity of, e.g., Socrates is humanity and it is shared by all humans; so, when we say that Socrates is one by virtue of being circumscribed by a quiddity from other things including Plato, this quiddity cannot be Socrates' quiddity, strictly speaking, because Socrates and Plato and all the other human individuals have the same quiddity, which is humanity. According to II.a, the quiddity by which an individual is circumscribed from other things does not have to be its essential features or some of its essential features; rather, it is the quiddity of the feature, essential or accidental, which that thing has uniquely. So, if Socrates is unique in being the only one speaking (in relation to a room and at a time), Socrates is circumscribed from everything else, including Plato, by the quiddity of this

quality, i.e., speaking (in relation to this room and at that time).⁴⁶² According to II.b, when al-Fārābī speaks of circumscription by a quiddity, in the case of individuals whose species have multiple individuals, like Socrates, that by which Socrates is circumscribed from other things, including Plato, is not his quiddity, strictly speaking, but it is his quiddity plus some other accidental features the conjunction of which uniquely picks out Socrates. So, when we say that Socrates is one by virtue of being circumscribed by a quiddity, we mean, according to Option II.b, that Socrates is circumscribed by humanity + speaking (in relation to this room and at that time), assuming that the only human who was speaking in that room and at that time was Socrates.⁴⁶³ It is common to both II.a and II.b that when we speak of something's being circumscribed by a quiddity, the relevant quiddity is not that thing's quiddity in the direct and unqualified sense of the expression. According to Option II.c, the relevant quiddity is that thing's quiddity in the direct and unqualified sense of the expression because according to this view, the quiddity of, e.g., Socrates is not humanity shared by Plato and other humans, but Socrates' quiddity is *his* humanity which is different from *Plato's* quiddity, which is Plato's humanity. In other words, the quiddities of individuals are individual and are not shared by other individuals of the same species (or by anything else).⁴⁶⁴

One textual support for Option II.a is that when al-Fārābī talks about the sense of unity by virtue of circumscription by a quiddity, he often uses the expression “by a certain quiddity [*bi-māhiyya mā*]” and this might be taken to mean that this quiddity does not have to be the quiddity of the thing which is circumscribed. That said, al-Fārābī also often expresses the senses of unity by virtue of physical circumscription in terms of circumscription “by a certain extremity [*bi-nihāya mā*]” and “by a certain place [*bi-makān mā*],” and by these, he clearly does not mean that a body X is circumscribed by the extremity of some other body, or by the place of some other body, but X is circumscribed “by an extremity proper to it [*bi-nihāya takhuṣṣuhu*]” or “by a place proper to it [*bi-makān yakhuṣṣuhu*]” (see, e.g., *KW* 16 50.6-8 = 49.5-6, *KW* 19 52.12 = 50.15-6), and these clearly mean the proper place and the proper extremity of X. Similarly, when al-Fārābī talks

⁴⁶² This view or something similar to it was suggested to me during a seminar on *KW* led by Peter Adamson and Rotraud Hansberger at the Munich School of Ancient Philosophy that I attended in the summer of 2018.

⁴⁶³ This view or something similar to it is proposed in Menn, *Al-Farabi's Metaphysics* Section 4, and Damien Janos' forthcoming book “Oneness, Essence, and Self-Identity: A New Interpretation of Avicenna's Henology,” V.3 “The Fārābīan connection.” I would like to thank Damien Janos for letting me to read an earlier version of his work as well as sharing the final version of it that will be published.

⁴⁶⁴ I elaborate on how I understand individual quiddities in Subsection f below.

about the sense of unity by virtue of circumscription by a quiddity, at least once, he speaks of circumscription “by *its* quiddity [*bi-māhiyyatihi*]” (my emphasis, *KW* 17 51.5 = 50.1). It seems unlikely that “its quiddity” would mean anything other than the usual sense of the expression; in other words, the quiddity of X should mean the essential features of X or some essential feature of X.

Moreover, in *KW* 94, speaking of this sense of unity, al-Fārābī says that “‘one’ is also said of all that is circumscribed by a quiddity proper to it and a being [*wujūd*] proper to it [*bi-māhiyya takhuṣṣuhu wa-wujūd yakhuṣṣuhu*], and it is circumscribed from everything else. So, it is one by virtue of a unity by virtue of which it is circumscribed from other things” (101.13-6 = 81.1-3, quoted as T5 (1) above). It is not entirely clear from this passage what the “quiddity proper to it” and the “*wujūd* proper to it” means, but at least in *KW* 78, it is clear that when X, a species, is said to be one by virtue of being circumscribed by a quiddity proper to X, the quiddity proper to it refers to the differentia (*faṣl*) of X, i.e., an essential feature of X. As al-Fārābī puts it in *KW* 78, the human species, for example, is one by virtue of being circumscribed by its quiddity from other animal species because even though the human species and the other animal species are co-participants (*qasīm*) in their shared genus, animal, the human species is one in this sense because it is “separated [*munfarid*] by a quiddity proper to it [*bi-māhiyya takhuṣṣuhu*],” and this is its differentia which is the unity (*waḥda*) “by which it is differentiated and circumscribed from all that is other than itself” (89.4-11 = 72.10-5). As I briefly discussed in Chapter 1 Section 6, the *wujūd* of something according to the sense of being as circumscribed by an extramental quiddity is its quiddity. In particular, if this thing is caused and has a divided quiddity, its *wujūd* is “the explained [*mulakhkhaṣa*] quiddity of that thing [i.e., the real counterpart of the definition⁴⁶⁵] or each part of the whole, [i.e.,] either its genus or its differentia, and since its differentia is more proper [*akhaṣṣ*] to it, it is more appropriately [this thing’s] being which is proper to it [*wujūdahu alladhī yakhuṣṣuhu*]” (*KH* 89 117.2-4). So, at least in the case of a kind, its unity (*waḥda*) according to the sense of unity by virtue of circumscription by a quiddity is a quiddity proper to it according to *KW* 78 and its being (*wujūd*) according to the sense of being by virtue of

⁴⁶⁵ More on the view that the definition is the linguistic representation of the essence in Aristotle and in al-Fārābī, see Chapter 2 Section 1 Footnote n.318.

circumscription by a quiddity is most appropriately its being proper to it according to *KH* 89, and in both cases, this is its differentia.

We find also in *MF* that the *wujūd* proper to X is that by virtue of which X is said to be one and *mawjūd* in these senses of unity and being. In al-Fārābī's account of the senses in which the first is said to be one, in *MF* 1 5 he says that the first is said to be one also in the sense of unity by virtue of circumscription by a quiddity and then makes a general statement about this sense of unity and its relation to the corresponding sense of being:

T6 *MF* 1 5 p.68 lines 9-12

فإن أحد معاني الوحدة هو الوجود الخاص الذي به ينحاز كل موجود عما سواه، وهي التي بها يقال لكل موجود واحد من جهة ما هو موجود الوجود الذي يخصه. وهذا المعنى من معاني الواحد يساوق الوجود.⁴⁶⁶

[1] For one of the senses of unity is the proper being [*al-wujūd al-khāṣṣ*] by which each being [*mawjūd*] is circumscribed from whatever is other than itself, [2] and [this unity] is that by which each being [*mawjūd*] is said to be one in respect of the fact that it is a being [*mawjūd*] with respect to the being [*al-wujūd*] proper to it. [3] This sense of the one is equivalent [*yusāwiqu*] to being [*wujūd*].

Al-Fārābī states in (1) that unity in this sense, i.e., that by virtue of which X is said to be one in this sense is the proper being (*al-wujūd al-khāṣṣ*) by which X is circumscribed from other things, and he remarks at the end that, as we also saw above, this is the sense of unity which is (minimally) coextensive with the corresponding sense of being. Al-Fārābī closely ties this sense of unity and the corresponding sense of being together in (2): X is said to be one in this sense by virtue of its unity according to this sense, i.e., by virtue of the proper being by which X is circumscribed from other things, and X is said to be one in this sense “in respect of the fact that it is a being [*mawjūd*] with respect to the being proper to it [*al-wujūd^a alladhī yakhuṣṣuhu*];” in other words, this proper being (*al-wujūd al-khāṣṣ*) by which X is said to be one in this sense is not *any* feature that X has, which could be an essential or an accidental feature. Rather, it must be

⁴⁶⁶ *SM*, 44.14-45.2 is a (near) duplicate of this passage (this (near) duplicate starts before T6 and continues after T6). The extended account containing T6 is quoted and discussed in Menn, *Fārābī in the Reception of Avicenna*, 89. This extended passage from *SM* is quoted in Janos, *On the One and Oneness*, 118-9 where Janos also indicates that more or less the same passage is found in both *MF* and *SM*. Janos discusses the theological implications of the sense of unity by virtue of circumscription by a quiddity in connection with this passage and other relevant passages on p.116-121.

the essential features of X or some of the essential features of X because this proper being is precisely the being proper to X (*al-wujūd alladhī yakhuṣṣuhu*) by virtue of which X is said to be *mawjūd* in the relevant sense. Of the senses of being distinguished in *KH*, we know that this must be the sense of being by virtue of circumscription by a quiddity, and as we saw above, the *wujūd* of X according to this sense of being is the quiddity of X, and at least for kinds with a divided quiddity, the proper *wujūd* of X is the differentia of X.

It is not specified in T6 that *al-wujūd al-khāṣṣ* or *al-wujūd alladhī yakhuṣṣuhu* is the differentia; so, it is compatible that when the thing under consideration is a kind, its proper being is its differentia, but if it is an individual, the proper being of the individual is its individual quiddity. To be clear, I am not claiming that this is what T6 suggests; all I am saying is that this is compatible with T6 as well as the related passages in *KW* and *KH* discussed above. I will come back to this point below,⁴⁶⁷ but for now, I want to emphasize that the identity between that by virtue of which something is one and that by virtue of which this thing is *mawjūd* in the corresponding senses of being and unity is not surprising because if al-Fārābī did not mean this sense of unity and this sense of being to have a very close correspondence, it would be very difficult to understand why he would use the very same idea to articulate these senses of unity and being, namely, circumscription by a quiddity. In other words, if we restrict our discourse to extramental things, in effect al-Fārābī claims that something is said to be one in the relevant sense and it is said to be (*mawjūd*) in the relevant sense not because of some other fact but precisely because of the same fact that it is circumscribed by its (extramental) quiddity. When al-Fārābī expresses the sense of being by virtue of circumscription by an extramental quiddity in *KH*, he sometimes uses the phrase “by a certain extramental quiddity [*bi-māhiyya^{tin} mā khārija al-naḥs*]” (e.g., *KH* 88 116.7) but he does not mean any quiddity, but rather the quiddity of that thing or a part of its quiddity, i.e., an essential feature it has. So, when al-Fārābī speaks of circumscription by “a certain quiddity [*māhiyya mā*]” in *KW*, just as in the same expression he uses talking about the corresponding sense of being in *KH*, he seems to mean the quiddity of *that thing*, i.e., the essential features of that thing or some of its essential features, and he uses “*māhiyya mā*” (or “*nihāya mā*” or “*makān mā*”) presumably because he formulates the relevant sense of unity generally.

⁴⁶⁷ In Subsection f.

These related observations suggest that something is said to be one in the relevant sense because it is circumscribed by *its quiddity*, i.e., by all or some of its essential features. So, these related observations count against Option II.a because according to Option II.a, something is said to be one in this sense because it is circumscribed by *a quiddity*, where this quiddity is the quiddity of an essential or an accidental feature this thing has. I will talk about the alternatives to Option II.a (namely Options II.b and II.c) below,⁴⁶⁸ but before that, I want to make it clear that Option II.a is by no means devoid of stronger textual evidence. Al-Fārābī first introduces the sense of unity *qua* unique in *KW* 25. There is a textual or interpretive issue at the beginning of this paragraph and I will address it shortly, but from the rest of the paragraph and from the examples al-Fārābī gives there, it is clear that something is said to be one in this sense if it has no co-participant (*qasīm*) either always or for the most part, or in relation to something and at a time; something has no co-participant always or for the most part either in an essential feature (e.g., the moon has no co-participant in its species, moonness), or in an accidental feature (e.g., Aristotle has no co-participant in a skill in philosophy because he is unequaled in that skill), or it has no co-participant in relation to something and at a time (e.g., I have a coin in my hand now and nothing else; this coin is one in this sense in relation to my hand and at the present moment). In all the examples of this sense of unity mentioned in *KW* 25 (and as far as I can see, also in the rest of *KW*), the thing which is said to be one in this sense is a substance or a substance-like thing. It is reasonable to expect that al-Fārābī says something congruent with this at the beginning of this paragraph. He says, as we have in both editions:

T7 *KW* 25 55.10-5 = 52.11-5

ويقال الواحد على ما لا قسيم له في المعنى الذي هو به موصوف، أي معنى كان، بأن ذلك ماهية له كأن يكون منفردا بالوجود والماهية التي له لا يشركه فيها غيره. فيكون هو المنفرد بالمعنى والماهية التي هي له إما دائما وإما في الأكثر وإما بالإضافة إلى شيء ما وفي وقت <ما>.

[1] ‘One’ is also said of that which has no co-participant [*qasīm*] in the feature [*ma ‘nā*] by which it is characterized, whatever [this] feature may be, [2] by virtue of the fact that that [*dhālika*] is a quiddity it has as if it were something unique [*munfarid*] in the being [*wujūd*] and the quiddity which it has and in which nothing else participates with it. [3]

⁴⁶⁸ In Subsection f.

For it is unique in the feature and the quiddity it has either always, or for the most part, or in relation to [*bi-l-idāfa*] a certain thing and at a [certain] time.

“*Ma ‘nan*” can mean “meaning” or “sense” and this is usually what it means in *KW*, but it can also mean entity, a real object or feature. Since, as explained above, al-Fārābī goes on to explain that something is said to be one in this sense because it does not have a co-participant in its species, or an accident it has, I translate the “*ma ‘nan*” in T7 and in similar contexts as “feature.” So, al-Fārābī states in (1) that something is said to be one in this sense because it has no co-participant, i.e., it is unique in some “feature by which it is characterized, whatever [this] feature may be;” we know from the following discussion of this sense of unity in the rest of this paragraph that this feature could be an essential feature or an accidental feature.

(2) in T7 is harder to interpret. First of all, the mss. and the printed editions have *bi-anna dhālika māhiyya lahu*; as this clause starts with “*bi-anna*,” it explains, clarifies, or specifies the previous claim. It is a natural reading of this clause that the demonstrative pronoun “*dhālika*” refers to the *ma ‘nā* under consideration; so, the claim seems to be that this *ma ‘nan* in which X is unique is a quiddity that X has (*māhiyya li-X*). The trouble is that as I explained above, this *ma ‘nan* could be an accidental feature X has; assume that Socrates is the only person who speaks in this room now. The accident of speaking (in relation to this room and now) is the relevant *ma ‘nā* here in which Socrates is unique. According to the interpretation of the first clause in T7 (2) presented right above, it seems that al-Fārābī calls such an accident a quiddity belonging to Socrates. As mentioned above, the usual and the direct meaning of the expression “the quiddity of X” (*māhiyyat X[gen]*) is the essential features of X or some of the essential features of X. So, if “a quiddity that X has” or “belonging to X” (*māhiyya li-X*) also means the same thing, as it appears to do so, this expression should not be used to refer to an accidental feature that X has. Perhaps we can make a distinction between the expression “the quiddity of X” (*māhiyyat X[gen]*) and the expression “a quiddity belonging to X” (*māhiyya li-X*) but such a distinction looks somewhat forced to me.

Alternatively, perhaps we should consider emending T7 (2). First of all, the text I reproduced above of T7 (2) following both editions is slightly emended; the mss. have *kāna* after *bi-anna dhālika māhiyya lahu* and both editors read this *kāna* as *ka-an* apparently because we would otherwise have *kāna yakūnu* there and this does not read well in that context. As I translated

above, T7 (2) according to both editions reads “... by virtue of the fact that that is a quiddity it has as if it were something unique in the being and the quiddity which it has and in which nothing else participates with it.” So, it appears that X is one in this sense because it is unique, i.e., it does not have a co-participant in a *ma ‘nan*, and this *ma ‘nan* is a quiddity belonging to X; but why would al-Fārābī then water down his claim and say, “as if it were [*ka-an yakūna*]” unique in the *wujūd*, i.e., the quiddity which it has and does not share with anything else? In other words, if this *ma ‘nan* that X does not share with anything else is a quiddity that X has, we would expect al-Fārābī to say simply that X is unique in this *wujūd*, i.e., this quiddity which it has and does not share with anything else. To be clear, al-Fārābī appears to use “*wujūd*” interchangeably with “*ma ‘nan*” in his summary account of this sense of unity towards the end of *KW*. He says at *KW* 94 101.7-13 = 80.10-5 that “‘one’ is also said of that which has no co-participant in the being [*wujūd*] it has –whatever being it may be–, that is to say, it has no co-participant in its genus, or in its species, or in an accident of knowledge or of a rank in place or of something else, and this is the case by nature or by will, or by chance or compulsion [*immā bi-l-ṭab ‘ wa-immā bi-l-irāda wa-immā bi-l-ittifāq aw al-qahr*]: this is like saying that ‘I have a coin’, which happens sometimes by will⁴⁶⁹ and sometimes by chance, or by nature as in the fact that the sun is one [in this sense], and [that] the moon is one [in this sense].” In other words, according to this passage, X is said to be one in this sense because it has a *wujūd* in which it has no co-participant.

So, perhaps in T7, al-Fārābī means the same thing by “a *ma ‘nan* that X uniquely has,” or “a *wujūd* that X uniquely has,” or “a quiddity that X uniquely has,” but again, if that is the case, why would he water down his claim with a “*ka-an*”? So, perhaps instead of reading this *kāna* in the mss. as *ka-an*, as Mahdi and Martini Bonadeo and her team do, we should consider a relatively mild emendation, namely, we should keep this *kāna* and read *fā-in* instead of *bi-anna* at the beginning of T7 (2) and then insert a *kāna* right after it. With this alternative reading, (2) as a whole would mean this: “So, if this [*ma ‘nā*] is a quiddity it has [i.e., an essential feature it has], then it would be something unique in the being [*wujūd*] and the quiddity which it has and in which nothing else participates with it;” in other words, according to this reading, in T7 (1) al-

⁴⁶⁹ As also noted in the critical apparatus in the edition by Martini Bonadeo and her team, MS. A has here *بإرادة وربما* *كان ذلك* while MSS. B and C lack this phrase (apparently due to homoioteleuton). Mahdi preserves this phrase and Martini Bonadeo and her team print *بإرادة وربما كان ذلك*, but it seems that they print *بإرادة* at the beginning of this phrase instead of *بإرادة* by mistake.

Fārābī makes a general claim that X is said to be one in this sense if it is unique in a feature (*ma 'nan*), and he specifies in (2) that if this feature is an essential feature, i.e., a quiddity that X has, then X is unique in the *wujūd*, i.e., the quiddity it has and does not share with anything else. According to this reading, the *wujūd* in T7 (2) does not mean *ma 'nan* in general, but it refers specifically to the *wujūd* of X, which is its quiddity according to the common sense of this expression (*wujūd* of X) in *KH* (and in other places) where al-Fārābī explains or employs the senses of *mawjūd* and the corresponding senses of *wujūd*.

In short, we face two interpretations of T7 (2) based on the two construal of the text found in the mss.; according to the reading adopted by the editors, “the *ma 'nā* that X uniquely has,” “the *wujūd* that X uniquely has,” and “the quiddity that X uniquely has” mean practically the same thing here: a feature, essential or accidental, that X uniquely has, but for some reason, al-Fārābī waters down his claim by saying, *as if X were* unique in this *wujūd*, i.e., this quiddity. Instead, according to this reading, he should say that X *is* unique in this *wujūd*, i.e., this quiddity.

Alternatively, according to the reading I propose, X is one in this sense because it is unique in a feature (*ma 'nan*) it has, but this could be an essential or an accidental feature. If this is an essential feature, then this *ma 'nan* is a *wujūd*, i.e., quiddity it has which it does not share with anything else. T7 (3) can be read in both ways. According to the first reading, the *wa-* in *bi-l-ma 'nā wa-l-māhiyya allatī lahu* is epexegetic. So, the beginning of T7 (3) means “it is unique in the feature, i.e., the quiddity it has...” According to the second reading, this *wa-* is not epexegetic. According to the second reading, the beginning of T7 (3) in effect means “it is unique in the feature [it has] and [sometimes more specifically] in the quiddity it has...”

So, if a quiddity that X has can mean a feature, essential or accidental, that X has (or the quiddity of this feature), then it seems that X’s circumscription by a quiddity can mean that X is circumscribed by a feature, essential or accidental, that it has. Recall that this is Option II.a under consideration.

The only textual support from *KW* for Option II.a is not the use of *māhiyya* apparently interchangeably with *ma 'nan* at the beginning of *KW* 25. As discussed above, in *KW* 26 which is reproduced as T2 above, al-Fārābī first asserts in (1) that everything is unique in a feature by which it is characterized, be it an essential feature (answering “what it is” (*mā huwa*)) or an accidental feature (answering “how it is” (*kayfa huwa*, i.e., quality), “how much it is” (*kam*

huwa, i.e., quantity) etc.). Then, in (2) and (3), al-Fārābī tries to present a reductio argument to support this principle. At the end of the paragraph, al-Fārābī states in (4),

T2 (4) *KW* 26 57.6-7 = 53.13-4

وهو من هذا الوجه مساوق المنحاز بماهية ما، فإنما هو منحاز بالذي ليس له قسيم فيه.

[a] In this respect, it is equivalent [*musāwīq*] to that which is circumscribed by a certain quiddity, [b] for it is circumscribed only by that in which it has no co-participant.

I translated “*musāwīq*” as “equivalent to” but it more literally means “accompanying” with the sense that if X *yusāwīqu* Y[acc], where you find Y, you also find X because it ‘accompanies’ Y. The verb appears to express a symmetrical relation. Al-Fārābī uses this verb above in *KW* 17 when he states that the sense of unity by virtue of circumscription by a quiddity is equivalent to the relevant sense of being; as I briefly addressed above, the sense of unity by virtue of circumscription by (an extramental) quiddity is equivalent to the sense of being by virtue of circumscription by an extramental quiddity, and this equivalence entails a strong sense of coextensiveness because we say that something *is* (*mawjūd*) in this sense and that it is one in this sense on account of the *same* fact that it is circumscribed by its (extramental) quiddity. In other words, in these contexts, *tasāwuq* expresses the equivalence between two terms where this equivalence is some sort of necessary coextensiveness.

The antecedent of the pronoun “it [*huwa*]” in “it is equivalent to that which is circumscribed by a certain quiddity” in T2 (4) is not obvious at first sight. Since al-Fārābī argues right above that all that is a *mawjūd* and a *shay’* is unique in a feature it has, be it an accidental or an essential feature, it appears that this pronoun refers to what is unique in a feature it has. As we already saw above, al-Fārābī states in other places in *KW* that “*mawjūd*” and “*shay’*” are minimally coextensive with “one” where something is said to be one in this sense because it is circumscribed by a quiddity. So, it is rather straightforward that “what is unique in a feature it has” is also minimally coextensive with “what is circumscribed by a quiddity” because these expressions have the broadest extension, holding true of all of what is a *mawjūd* and a *shay’*. The interesting question is whether al-Fārābī means here that these two expressions are *merely* coextensive or that there is a stronger connection between them that grounds their coextensiveness, like the sense of unity by virtue of circumscription by (an extramental) quiddity

and the sense of being by virtue of circumscription by an extramental quiddity, because something is said to be *wāḥid* and it is said to be *mawjūd* in these senses precisely because of the same fact, namely, that it is circumscribed by that quiddity.

Whether “what is unique in a feature it has” and “what is circumscribed by a quiddity” are *merely* coextensive or there is a stronger connection between them depends on how we read the following clause (b) in T2 (4). In this clause, al-Fārābī adds, “for it is circumscribed only by that in which it has no co-participant.” As I explained above, this means that X is circumscribed by Y only if X has no co-participant in Y, i.e., X is unique in Y. As I also mentioned above, being unique also seems to be sufficient for circumscription even though the meaning of circumscription does not reduce completely to uniqueness. So, X is circumscribed by a quiddity just in case X is unique in this quiddity. The decisive question is whether we should read the *fa-* at the beginning of this clause robustly or in a deflationary way. If we read it robustly, this clause justifies the previous clause, namely (a). In other words, “what is unique in a feature” is equivalent to “what is circumscribed by a quiddity” *because* something is circumscribed only by that in which it is unique. If T2 (4) is read in this way, it seems to be suggested that what is circumscribed by a quiddity is unique in that quiddity, and this quiddity is the feature this thing has, accidental or essential, in which it is unique so that “what is unique in a feature” and “what is circumscribed by a quiddity” are equivalent in the sense that they are *necessarily* coextensive because they express the same fact, i.e., that something is unique in a feature it has and that it is circumscribed by that feature. Alternatively, if we read the *fa-* at the beginning of (b) in T2 (4) in a deflationary way, this clause does not justify the previous clause but explains it in a loose sense by adding a relevant information. According to this reading, T2 (4) can be paraphrased as follows: “what is unique in a feature” and “what is circumscribed by a quiddity” are coextensive because it holds of any *mawjūd* and any *shay'* that it is unique in a feature it has, be it an essential or an accidental feature, and it also holds of it that it is circumscribed by its quiddity, i.e., by its essential features or some of its essential features. So, the truth-makers of these two claims do not have to be the same fact. Nevertheless, as a matter of fact, there is also some connection between the idea of circumscription and the idea of being unique because X is circumscribed by Y only if X is unique in Y.

So, according to the first reading of T2 (4), al-Fārābī suggests that when we say that X is circumscribed by a quiddity, we mean that that quiddity could be an essential or an accidental feature that X has uniquely. I also suggested above that according to a reading of the beginning of *KW* 25, “a quiddity that X has uniquely” seems to be used interchangeably with “a feature (*ma‘nan*) that X has uniquely.” I also suggested alternative readings of these two passages. Apart from these two passages, there is not much textual support for Option II.a in *KW*. Claims in *KW* 71, 78, and 94 may at first appear to support Option II.a, but a closer look at these passages shows that they do not support it. Talking about the many arising from each sense of unity (i.e., going through the collection of things each of which is said to be one in a given sense of unity), in *KW* 71, al-Fārābī mentions the many arising from things each of which is circumscribed by a place, and then he starts to talk about the many arising from things each of which is circumscribed by a quiddity: “... [the many] arising from ones each one of which is circumscribed by a certain quiddity like substance, quantity, quality, human,⁴⁷⁰ horse, ox,⁴⁷¹ knowledge, ignorance, black, white etc.; of the senses of the one, this [last] sense is, as I believe, the one which Parmenides had in mind [*fahimahu*] in his statement that being is one [*al-mawjūd wāḥid*]” (83.11-4.1 = 69.6-9). It is clear that when al-Fārābī talks about something’s being circumscribed by a quiddity here, he does not mean that this quiddity could be that thing’s essential feature or one of its accidental features like quantity, quality, knowledge, ignorance, black, white etc. Rather, as we saw before, al-Fārābī states or implies in several places in *KW* that this sense of unity applies to all to which “*mawjūd*” and “*shay*” in the relevant senses apply, and as quoted above, he implies at *KW* 17 51.11 = 50.5-6 that this sense of unity is said of all the categories, and things under the categories, all the way down to the particulars under each category (as well as things outside the categories). In agreement with this, in the passage from *KW* 71 quoted above, al-Fārābī’s point is that the category of substance is circumscribed by a quiddity (presumably by *its* quiddity), and similarly the category of quantity is circumscribed by a quiddity (presumably by *its* quiddity), and the other categories are like this; moreover, the kinds under the category of substance or under the other accidental categories are also

⁴⁷⁰ The mss. and Mahdi have الإنسان, but Martini Bonadeo and her team have الإنسان apparently as a typo because they do not record the mss. readings or Mahdi’s reading in the apparatus.

⁴⁷¹ The mss. have النور, and apparently to make this go along with the following contrary states (“knowledge, ignorance, black, white”) Mahdi inserts والظلمة after النور. Martini Bonadeo and her team emend النور into الثور. I adopt the emendation by Martini Bonadeo and her team because I think their emendation is less intrusive than Mahdi’s insertion of an extra word. In any case, the overall meaning of the passage does not change.

circumscribed by a quiddity: for example, the human kind (*al-insān*) is circumscribed by a quiddity (presumably by *its* quiddity), and also the white kind (*al-bayāḍ*) is circumscribed by a quiddity (presumably by *its* quiddity). Since this sense of unity applies to all that is a being (*mawjūd*) whether it is in the category of substance or in one of the accidental categories (or the *mawjūdāt* outside the categories, i.e., the theological things), al-Fārābī surmises that this is the sense of unity that Parmenides must have meant when he claims that “being is one [*al-mawjūd wāḥid*].”

Also, in *KW* 78 (part of which I quoted and discussed above) al-Fārābī mentions that something can be circumscribed by a feature in the accidental categories, but he clearly distinguishes these from circumscription by a quiddity. At the beginning of the paragraph, he declares that “[t]hat which is circumscribed by a certain quiddity⁴⁷² is most properly said to be one, next [comes what is circumscribed] by each thing⁴⁷³ from the remaining categories” (89.4-5 = 72.10-1). The contrast between circumscription by a quiddity (*māhiyya*) and circumscription by a thing in the remaining categories is not surprising because one way to think of the categories in the Aristotelian tradition is to pick something and pose questions to it: the answer to “what is it” (*mā huwa*) yields its substance or its quiddity (*māhiyya*, whatness); the answer to “how much is it” (*kam huwa*) yields its quantity (*kammiyya*, how-much-ness); the answer to “how / of what sort is it” (*kayfa huwa*) yields its quality (*kayfiyya*, how-ness / of-what-sort-ness) etc.⁴⁷⁴ As I will

⁴⁷² The mss. have *بماهيّة* and Martini Bonadeo and her team follow this reading, but Mahdi adds *ما* after this; I adopt Mahdi’s emendation because as I pointed out above in Footnote n.430, according to al-Fārābī’s default formulation for this sense of unity, something is said to be one in this sense if it is *منحاز بماهيّة ما*. In any case, whether we add a *ما* at the end does not make a big difference in meaning because in both cases *ماهيّة* is indefinite. Adding the *ما* at the end would further emphasize this indefiniteness.

⁴⁷³ The mss. have *بشيء شيء* here and Martini Bonadeo and her team preserve this reading and I follow them. Mahdi deletes the second *شيء*. Both readings mean more or less the same thing.

⁴⁷⁴ This way of understanding the categories (i.e., pick something; the answer to “what is it” is a substance (in relation to it), the answer to “how much is it” is a quantity (in relation to it) etc.) seems to be suggested at *Top.* I.9 103b35-9, but earlier in *Top.* I.9, at 103b-27-35, Aristotle also describes another way of understanding the categories (i.e., the categories as classifying entities or features in reality *absolutely*, not in relation to something: we go through the entities or features in reality and pose the same question in each case, “what is it;” the answer to this question will provide its kind which is ultimately placed under one of the highest kinds of beings we call the categories; if a human is picked, the answer to “what is it” is a kind whose highest kind is the category of substance; if the color white is picked, the answer to “what is it” is a kind whose highest kind is the category of quality etc.). If we start by picking a particular substance in the absolute sense (i.e., a primary substance according to the *Categories*), the answers we get in response to “what is it,” “how much is it,” “how / of what sort is it” etc. questions posed to it will be a substance *in relation to it*, a quantity *in relation to it*, a quality *in relation to it* etc., and these will also be a substance *absolutely*, a quantity *absolutely*, a quality *absolutely* etc. On the other hand, if we pick, e.g., a quantity, the answer we get in response to “how / of what sort (*kayfa* = *poion*) is it” will be a quality in relation to this quantity, and on the face of it, this does not have to be a quality *absolutely*, but it turns out that it is also quality *absolutely*, and it seems that the only real discrepancy between two ways of classifying entities or features according

explain below, this is a first approximation to how *māhiyya* should be understood, but there is more to it.

It would take me far from my purpose here to present a comprehensive discussion of all the ways of understanding the categories in the Aristotelian tradition and how they relate to each other, but it is worth noting that as I briefly discussed in Chapter 1 Section 6, according to al-Fārābī's account in *KH* following Aristotle, we can distinguish substance in the absolute sense from the substance of something. Roughly speaking, substance in the absolute sense refers to the individuals which are not said of other things nor are present in other things, but other things are said of or present in them. These individuals are the "primary substances" of the *Categories*. The universals of these individuals (mental representations of them, indicating what they are) are also called substances absolutely, and these are the "secondary substances" of the *Categories*. There are also accidental individuals which are not said of other things but are present in other things, and their universals are accidental universals (mental representations of them, indicating what they are). So, the universal of an accident is the substance of that accident because it indicates what that accident is, but this universal is in an accidental category, absolutely speaking. However, if we pick a substance and ask "what is it," the universal we get in response will be a universal in the category of substance. Similar to the way in which we talk about the substance of a substance as well as the substance of an accident, we can talk about the quiddity of a substance as well as the quiddity of an accident.

As discussed above, after stating at the beginning of *KW* 78 that what is circumscribed by a quiddity comes first and then what is circumscribed by something in the remaining categories, al-Fārābī mentions the animal species (human, horse, donkey) as examples of "that which is separated from other things by a certain quiddity [*alladhī yanfaridu bi-māhiyya^{lin} mā 'an ghayrihi*];" for example, the human species is circumscribed from the other animal species (and the other species) by its differentia, and in general "[e]ach of these species is one if it is separated

to the two understanding of the categories sketched out above comes up with the substance of something vs. a substance absolutely. As I discussed in Chapter 1 Section 6 and also talk about it in the following in the body of this chapter, if we pick a quantity, say a line, in response to the "what is it" question, we cite the line kind which is a species under the category of quantity; so the line kind is a quantity *absolutely*, but it is a substance *in relation to* a line.

Similar considerations are stated or implied by al-Fārābī too; see, e.g., *KH* 3-5, 22. I talk more about al-Fārābī's understanding of quiddity below in Subsection f.

by a certain quiddity proper to it [*bi-māhiyyaⁱⁿ mā takhuṣṣuhu*], and its unity is the differentia by which it is differentiated and circumscribed from all that is other than itself” (89.5-11 = 72.11-5). So, it seems that here we consider things in the category of substance, and in particular the species under the category of substance, and first we consider their circumscription by their quiddity, and specifically by their differentia, since each animal species shares its genus, animal, with the other animal species. After considering in what sense each of these species is circumscribed from the others by its quiddity proper to it, i.e., by its differentia, al-Fārābī seems to consider other things in the category of substance, species or individuals, and illustrate in what respect each is circumscribed by something in an accidental category: “[i]t is likewise with that which is circumscribed by the knowledge of grammar [*al-naḥw*]⁴⁷⁵ from that which is circumscribed by the capacity of writing [*al-kitāba*]. Likewise, that which is circumscribed and separated by a certain place among the places with the exclusion of other things [*dūna ḡhayrihi*] is one by virtue of that place. It is likewise with each of that which is separated by something it has with the exclusion of other things” (89.11-4 = 72.15-8). So, just as something is circumscribed by a quiddity, it can also be circumscribed by a place or by an extremity; whether the place and the extremity are under the category of quantity or under some other category, something can be circumscribed by these and by other features under some accidental category. So, a person can be circumscribed by the knowledge of grammar (*al-naḥw*) which is a quality or another person can be circumscribed by the capacity of writing (*al-kitāba*) which is also a quality; just like the human species is circumscribed by its differentia from the horse species and the other animal species, and the horse species is circumscribed from the human species and the other animal species by its own differentia, the first person is circumscribed from the second person (and from others) by the accident of having the knowledge of grammar which distinguishes the first person from the second person (and the others), and likewise, the second person is circumscribed from the first person (and from others) by the accident of having the capacity to write which distinguishes the second person from the first person (and the others). More generally, as quoted above, al-Fārābī states that “each of that which is separated by something it has with the exclusion of other things” is circumscribed by that thing from the others. It is important for our purpose that unlike in Option II.a, *circumscription by an accidental*

⁴⁷⁵ I read with the mss. and Martini Bonadeo and her team and I do not add منفرد as Mahdi does after بال نحو here.

feature which distinguishes the thing under consideration from others is not subsumed under *circumscription by a quiddity* but is distinguished from it.

Finally, a claim in *KW* 94 appears to lend support to Option II.a but a closer look at it suggests that it is neither for nor against Option II.a; rather, it is difficult to make sense of this claim. As quoted as T5 above, in his review of the sense of unity by virtue of circumscription by a quiddity towards the end of *KW* 94, al-Fārābī first describes this sense of unity (T5 (1)), and then he says in T5 (2)-(4), “[2] [i]f the quiddity of each thing is circumscribed from what is other than it only by some of the categories [*wa-idhā kāna kull shay’ innamā tanḥāzu māhiyyatuhu ‘an ḡhayrihi bi-ba’d al-maqūlāt*], and [3] it is equal [*musāwīyan*] [in extension] to ‘being’ [*mawjūd*] which denotes the categories and each of what has a certain quiddity, then [4] it is also equal [in extension] to ‘thing’” (101.16-2.2 = 81.3-5). I talked about (3) and (4) in sufficient detail above. (2) should also be closely related to (3) but what al-Fārābī says in (2) is unlike anything he says in his description of this sense of unity elsewhere in *KW*. Normally, al-Fārābī says that something is circumscribed by a quiddity from others; in (2) he says that *the quiddity of each thing* is circumscribed from what is other than it (‘*an ḡhayrihi*) by some of the categories. Al-Fārābī does not mention anywhere else in *KW* that a quiddity is circumscribed, and it is also not clear how this claim in (2) relates to the sense of unity by virtue of circumscription by a quiddity.⁴⁷⁶ This passage might simply be corrupt,⁴⁷⁷ but how it should be emended would be informed by the correct understanding of al-Fārābī’s account of the sense of unity by virtue of circumscription by a quiddity, and since its correct understanding is precisely the issue under consideration here, it would not be appropriate to take an emended version of (2) one way or another as an independent evidence for or against Option II.a.

⁴⁷⁶ Al-Fārābī mentions “*māhiyya munḥāza*” in *On the Intellect*, 14.4, 5, but he seems to use *munḥāza* here (and *inḡiyāz* below at line 9) in its general sense of distinguishing or separating (more or less meaning the same thing as *tamayyuz* or *infirād*) rather than specifically referring to the senses of unity by virtue of circumscription or the sense of being by virtue of circumscription by an extramental quiddity.

⁴⁷⁷ Another thing suggesting that this passage is corrupt is that it is said that the *quiddity* of this thing is circumscribed from “what is other than it [*‘an ḡhayrihi*],” i.e., what is other than this thing, not “*ḡhayrihā*,” meaning “what is other than [this quiddity].” So, *the quiddity of X* is circumscribed from *things other than X*; this seems to be incongruent with al-Fārābī’s usual expressions of circumscription in *KW* where Y would be said to be circumscribed from what is other than Y (in the relevant class), i.e., Y would be compared with what is other than Y, not with what is other than Z which is related to Y (I assume that, at least in most cases under consideration, the quiddity of X is not identical to X).

I presented the reasons for Option II.a and the reasons against Option II.a, and I also explained how one can still account for the textual evidence supporting Option II.a if one is persuaded by the reasons against Option II.a. I do not think that the textual evidence *clearly* decides in favor of or against Option II.a but I find the alternatives to Option II.a (i.e., Options II.b and II.c) more likely to represent al-Fārābī's considered opinion than Option II.a. This is because there are passages against Option II.a in *KW* as reviewed above, and the textual support for Option II.a derived from the beginning of *KW* 25 and the end of *KW* 26 does not present itself as incontrovertible. More importantly, this is because of the obviously very close relation between the senses of being and unity by virtue of circumscription by (an extramental) quiddity that can be observed from al-Fārābī's statements about the "accompaniment" between the relevant senses of being and unity in *KW* and *MF* (and *SM*), and from the very fact that the sense of unity by virtue of circumscription by a quiddity and the sense of being by virtue of circumscription by an extramental quiddity are articulated using not similar ideas but *the same* idea, i.e., circumscription by a quiddity. If we do not want to say that al-Fārābī developed these senses of unity and being by virtue of circumscription by a quiddity using apparently the same idea, but that when an extramental entity is said to be one in this sense because it is circumscribed by a quiddity and *the same entity* is said to be (*mawjūd*) in this sense because it is circumscribed by a quiddity, these two quiddities about the same entity refer to two different things, then the two quiddities in both cases must refer to the same thing. Since the relevant quiddity in this sense of being is clearly the quiddity of this entity, the relevant quiddity in the corresponding sense of unity should also be the quiddity of this entity.

It cannot be accidental that al-Fārābī articulates these senses of unity and being apparently using the same idea of circumscription by a quiddity in *KW* and *KH*, and uses them in different metaphysical works, i.e., *MF* and *SM*. I will explain in Section 3 below the main motivation behind al-Fārābī's articulation of these senses of unity and being using the same idea, and it will become clear that al-Fārābī put serious thought into articulating these senses of unity and being such that these senses of unity and being apply to the same entity by virtue of *the same fact* (i.e., this entity's being circumscribed by the same quiddity in both cases) so that these senses of unity and being are necessarily coextensive. Also, in an important theological account of the attributes of the first in *MF* (and *SM*) al-Fārābī applies these senses of unity and being to the first by virtue of the same fact that the first is circumscribed by its quiddity. This indicates the importance of

these senses of being and unity as applying by virtue of the same fact for al-Fārābī's overall metaphysical project. So, maintaining that circumscription by a quiddity means the same thing in these senses of being and unity is more important for making a coherent sense of al-Fārābī's overall metaphysical project than maintaining apparently more natural readings of two passages in *KW* (namely, the beginning of *KW* 25 and the end of *KW* 26) which, nonetheless, have reasonable alternative readings too. So, with these being taken into consideration as well as the other passages in *KW* that seem to go against Option II.a, the evidence against Option II.a outweighs the evidence for it.

f. Option II.b vs. Option II.c: Are there individual quiddities?

When we say that X is one by virtue of being circumscribed by a quiddity, if we do not mean that it is circumscribed by some feature, accidental or essential, which it uniquely has, but that more specifically, it is circumscribed by *its* quiddity in the usual sense of the expression, we are led to the Options II.b and II.c. Recall that according to Option II.b, this quiddity is the quiddity of the thing *plus* some accidents so that their conjunction uniquely picks out this thing. According to Option II.c, this quiddity is *simply* the quiddity of that thing, and individual things have individual quiddities so that, e.g., the quiddity of Socrates is different from the quiddity of Plato. Option II.b shares with II.c that when we say that X is circumscribed by a quiddity, this quiddity cannot simply be an accidental feature of X (or the quiddity of this accidental feature), but Option II.b also shares with II.a that, e.g., the quiddity of Socrates is the same as the quiddity of Plato, the same humanity, so that Socrates shares his quiddity with all the other human individuals. Accordingly, when we say that Socrates is circumscribed by a quiddity from other things, including other human individuals, according to both Option II.a and II.b, this quiddity cannot *simply* be the quiddity of Socrates. In this case, Option II.a proposes that this quiddity is an accident that Socrates uniquely has, and Option II.b proposes that this quiddity is Socrates' quiddity (i.e., humanity) plus some accidents which together uniquely pick out Socrates. The advantage of Option II.b is that it acknowledges and tries to combine these two insights. It shares with Option II.c the insight that when we talk about something's being one by virtue of being circumscribed by a quiddity, we mean that it is circumscribed by *its quiddity*, not by some feature, essential or accidental, that it uniquely has. I tried to motivate this insight above. Option

II.b shares with Option II.a the insight that quiddities are universal. I use universal here somewhat loosely and I will spell out this thesis below, but briefly put, this thesis proposes that in a species with multiple individuals, the quiddity of an individual in this species is the same as the quiddity of another individual in this species so that, e.g. Socrates is not circumscribed from Plato or other human individuals by his quiddity because they all have the same quiddity.

The problem with Option II.b is that al-Fārābī does not say anything indicating that when he talks about circumscription by a quiddity, in the case of individuals, he does not *simply* mean circumscription by its quiddity, but he means circumscription by its quiddity *plus some accidental features*. I think that even though Option II.b does not reflect al-Fārābī's language when he talks about this sense of unity, it appears to be preferable because it is commonly held that al-Fārābī and the similarly minded philosophers in the Aristotelian tradition cannot think that individual quiddities exist. In what follows, I will first explain what I mean by an individual quiddity. Then I will try to identify why there is a resistance to attributing the existence of individual quiddities to philosophers like al-Fārābī, and I will try to remove this resistance. Finally, I will present some reasons in support of Option II.c. I grant that these reasons do not provide knock-down arguments in support of Option II.c. Nonetheless, I think that, all considered, there are better reasons to prefer Option II.c over the alternatives. The outline of my strategy in support of Option II.c over Options II.a and II.b is as follows: I already presented reasons to prefer Options II.b and II.c over Option II.a. I think that Option II.c is simpler and represents a more natural understanding of al-Fārābī's characterization of the sense of unity by virtue of circumscription by a quiddity, but there is a tendency to favor Option II.b over Option II.c because of the resistance to the existence of individual quiddities. So, I believe that the more I weaken this resistance, the more sympathetic the supporters of Option II.b will become towards Option II.c.

First things first: what do I mean by an individual quiddity? More precisely, what are the different views entailed by the view that there are individual quiddities and those entailed by the view that there are no individual quiddities but that all quiddities are (or can be) shared by multiple things? In other words, what is at stake with being committed to one of these two competing views? There is a trivial sense in which universal quiddities do not exist according to most philosophers in the Aristotelian tradition, starting from Aristotle, because in reality there are

only individuals with certain features, and there are no self-standing universals, even if we grant that that idea is coherent. So, when we ask whether there are individual extramental or real quiddities or not, we should ask whether there are quiddities in the extramental world which are *intrinsically* particularized. This question is equivalent to the question of, e.g., whether the extramental feature in Zayd which makes the claim “Zayd is human” true (i.e., the ‘slice’ of extramental reality pertaining to Zayd that the expression “Zayd’s humanity” denotes) is *intrinsically* distinguished from the extramental feature in ‘Amr which makes the claim “‘Amr is human” true (i.e., the ‘slice’ of extramental reality pertaining to ‘Amr that the expression “‘Amr’s humanity” denotes). There are at least two coherent ways of giving a negative answer to this question that attracted supporters in pre-modern philosophy. I am presenting these views in outline just to introduce the contours of the dialectical field to the reader without any pretense to accurately reconstruct views held by actual historical philosophers in the Aristotelian tradition or in traditions in dialogue with the Aristotelian tradition so that a philosopher like al-Fārābī could recognize these positions as competing positions with *prima facie* persuasiveness. First, one can hold that a feature in reality like humanity is a particular intelligible entity, a Platonic Idea, if I am allowed to use that term somewhat loosely, and such entities can intermingle. As a result of such intermingling, we get the perceptible particulars. So, a perceptible particular is the conjunction of such intelligible entities, and what individuates a perceptible particular is the conjunction of such intelligible entities. In other words, a particular is just the conjunction of a number of such intelligible entities and there are no two distinct particulars which are the conjunctions of the same collection of such intelligible entities.⁴⁷⁸ Alternatively, one can hold that time and space are primitively individuated. There is no further answer to the question “on the basis of what does the present time period (say, +1 minute from now) differ from the time period of the same length ten minutes later?” They just differ and we are equipped with a basic capacity to directly cognize this difference (primarily by means of perception). Likewise, there is no further answer to the question “on the basis of what does this space region differ from that space region?” They just differ and we are equipped with a basic capacity to directly cognize this difference (primarily by means of perception). The successful performance of the deictic function of the demonstratives ultimately depends on the fact that slices of space and time are individuated and we have a basic capacity to cognize them as such. The real features like

⁴⁷⁸ A view like this of perceptible particulars seems to be suggested in *Isagoge*, 7.21-4.

humanity indicate ways of being and there is no intrinsic distinction between, e.g., Zayd's humanity and 'Amr's humanity. Rather, we can only distinguish Zayd's humanity from 'Amr's humanity because we can distinguish the subject of Zayd's humanity from the subject of 'Amr's humanity, and we can distinguish this chunk of matter from that chunk of matter ultimately because this chunk of matter occupies this region of space now and that chunk of matter occupies that region of space now.⁴⁷⁹

As an alternative to these two views about the individuation of particulars (or perceptible particulars more specifically), I submit to the reader's consideration the view that there are individual quiddities in the sense that just as this region of space is primitively distinct from that region of space, Zayd's humanity is also primitively distinct from 'Amr's humanity. I defend that all considered, there is a stronger, though not decisive, reason to assume that al-Fārābī is committed to the existence of individual quiddities rather than not. To be clear, as I will detail below, al-Fārābī thinks that the thought or the mental representation (*ma'qūl*) of an extramental thing, like the thought of the human, is universal, and so are the linguistic expressions of this thought, which can be an expression of it making the quiddity of this thing known (*yu'arrifu*) in a condensed way (*mujmalan*), i.e., its name "human," or an expression of it making the quiddity of this thing known in an articulated way (*mulakhkhaṣan mufaṣṣalan*), i.e., its definition "rational animal" (or whatever is the correct definition of humans).⁴⁸⁰ So, even if I am right that al-Fārābī is likely committed to the existence of individual quiddities, it seems that he would not think that we have a basic cognitive capacity to grasp individual quiddities as such, in the way that we have a basic cognitive capacity to grasp individuated slices of space and time as such. Rather, he would think that the only way we can grasp a quiddity is by means of mental representations or thoughts, and these are universal (actually or possibly multiply instantiated). But the limits of human cognition do not impose an absolute limit on how things are in reality. It is at least possible to conceive a being which has a basic cognition of individual quiddities as such in the way that we have a basic cognition of individuated slices of space and time as such.

⁴⁷⁹ The view that the particulars of the same kind are individuated by their matter while sharing the same form is suggested by some passages in Aristotle (see, e.g., *Met.* Λ.8 1074a31-8 and *DC* I.9 277b27-279a10).

⁴⁸⁰ More on the name denoting in a condensed way and the definition in an articulated way, see Chapter 2 Section 1 Footnote n.318.

I hope that I have sufficiently clarified what I mean when I talk about individual quiddities and how the view which posits individual quiddities differs from some competing views. Next, I want to explain what seems to me to be the main reason why there is a resistance to attributing the existence of individual quiddities to a philosopher like al-Fārābī.

As I briefly touched upon above, al-Fārābī states in *KH* 3 that most of what is sought using interrogative particles and what ought to be given in response to such questions are called after these interrogative particles or by terms derived from these particles. For example, what is given as a response to the question of “how much / many (*kam* = *poson*)” is called a quantity (*kamm* = *poson* or *kammiyya* = *posotēs*), and what is given as a response to the question of “how / of what sort (*kayfa* = *poion*)” is called a quality (*kayf* = *poion* or *kayfiyya* = *poiotēs*), and so on. In particular, what is given as a response to the question of “what (*mā* = *tī*) it is” is called a ‘what’ (*mā*) or a quiddity (*māhiyya* = *tī esti*, or *to tī ēn einai*).

Al-Fārābī states in *KH* 4 that of the things by which a substantial particular⁴⁸¹ is characterized (*yūṣafu*), some make known to us (*yu* ‘*arriḥunā*) what this particular substance is (i.e., something in the category of substance), others inform us about *how much* this particular substance is (i.e., something in the category of quantity), and so on (see also *KH* 22).

As I reminded above and discussed in Chapter 1 Section 6, when we ask “what is X,” we seek the substance of X (*ousia tinos*); X could be something in the category of substance or it could also be something in one of the accidental categories. If, more specifically, X is something in the category of substance, by this question, we seek a substantial universal. So, as a first approximation, the quiddity of something is what is sought by the question of what that thing is and what is given as an answer to that question.

So far, I have not stated precisely what is it that we seek (the *maṭlūb*) when we ask “what is X” or give as an answer to this question (*mā yujābu bihi* ‘*an hādhā al-su’āl*): a linguistic expression, or a mental representation or thought (*ma’qūl*), or an extramental entity. As I briefly discussed in Chapter 1 Section 6, at the beginning of *DI* Aristotle provides a brief, simple, but informative

⁴⁸¹ A *hādhā mushār ilayhi* = *tode ti*: al-Fārābī uses “*mushār ilayhi*” to refer to a particular that we can point to, and this can be a substantial particular, i.e., *mushār ilayhi* which is not in a subject (*lā fī mawḍū’*), or it can be an accidental particular, i.e., *mushār ilayhi* which is in a subject (*fī mawḍū’*), but as the following paragraph, *KH* 5, suggests, he seems to mean a substantial particular here in *KH* 4.

picture of the relation between extramental entities (*pragmata*), mental representations or thoughts (*pathēmata* in the soul), spoken language (*ta en phōnē(i)*), and written language (*tagraphomena*), and by and large al-Fārābī follows this picture in *KH* too. As we can see from this account at 16a3-8 and from Aristotle's statements in the following chapters of *DI*, mental representations are "likenesses [*homoiōmata*]" of extramental entities and this is a natural relation of representation; spoken language is "signs [*sumbola*]" of the mental representations and this is a conventional relation of representation; finally, written language is "signs" of the spoken language, and this is again a conventional relation of representation. For our current purpose, we can disregard the distinction between spoken language and written language.

As al-Fārābī puts it in *KH* 7, when we form thoughts or mental representations (*ma'qūlāt*) directly of extramental things, these thoughts are called primary thoughts (*ma'qūlāt uwāl*), but some thoughts attach to these primary thoughts insofar as they are in the soul (or the mind, *nafs*), like being a species or a genus. These thoughts which attach to other thoughts are called secondary thoughts (*ma'qūlāt thawānī*). As we see in *KH* 12-3, the secondary thoughts, like being universal or being a predicate or a subject, necessarily attach to the primary thoughts insofar as these primary thoughts are in the soul, and logic studies these secondary thoughts while the other sciences separate the primary thoughts from such secondary thoughts and study the primary thoughts insofar as they are the thoughts of extramental things. So, it appears that all primary thoughts are universal and are species or genera (depending on their relative generality), and being universal, being a species or a genus, and other secondary thoughts like these necessarily attach to the primary thoughts insofar as the primary thoughts are in the soul, but in the sciences other than logic, we treat the primary thoughts separated from such secondary thoughts simply as mental representations of extramental things.

As I also mentioned in Chapter 1 Section 6, in *KH* 19-36, al-Fārābī provides a detailed account of how we form thoughts of extramental things and the relation between expressions denoting various aspects of extramental things and their thoughts. I will not go through all the details of this account here, but I will just present the main aspects of this account that pertain to the current discussion. First of all, al-Fārābī follows Aristotle's account at the beginning of *DI* that mental representations are likenesses of extramental things and language denotes (*yadullu 'alā*) mental representations immediately. As al-Fārābī puts it in *KH* 23 and at *KH* 24 73.5-10, in the

order of cognition, the first is the knowledge of a substantial particular⁴⁸² by perception. Then we distinguish that this particular thing is characterized by (*mūṣaf bi-*) many features; so, we distinguish that we can point to it (*nushīru ilā*) as “this human [*hādhā al-insān*]” or “this white [thing] [*hādhā al-abyaḍ*]” or “this tall [thing] [*hādhā al-ṭawīl*].” After this comes the first thoughts or the beginning of thoughts (*awwal al-ma ‘qūlāt*) denoted (*yadullu ‘alā*) by expressions obtained by removing the demonstrative adjective from the previous set of expressions, e.g., “the human [*al-insān*],” or “the white [thing] [*al-abyaḍ*],” or “the tall [thing] [*al-ṭawīl*].” What these thoughts refer to still contains a single particular substance, or as al-Fārābī puts it, “in each one of these a particular [substance] which is one and the same in number [*mushār wāḥid bi- ‘aynihi fī al- ‘adad*] is contained [*yanṭawī fīhi*]” (73.2), but these thoughts are universal in the sense that, e.g., “*al-insān*” does not refer specifically to a *determinate* particular human being, but it refers to *some* particular human being.

Let’s assume that Zayd is a human, and he is tall. There is a difference between the way in which “*al-insān*” refers to Zayd and “*al-ṭawīl*” refers to Zayd. “*Al-insān*” refers to Zayd in respect of his essence (*dhāt*), but “*al-ṭawīl*” refers to Zayd in respect of the presence of a feature in him which is outside of his essence, namely, whiteness. So, in the next stage of cognition, we separate the idea of whiteness contained in the idea expressed by “the white” from the implied idea of the subject of whiteness also contained in the idea expressed by “the white;” in this way, we obtain the thought of whiteness (*al-bayāḍ*), or the thought of tallness (*al-ṭūl*) on their own expressed normally by verbal nouns (*maṣdar*) in Arabic as we see in the mentioned examples. Al-Fārābī emphasizes that this last step of differentiation (*tamyīz*) is proper to the intellect, without the involvement of the perception (73.9-10). There is no exact counterpart for “*al-insān*” in this last step because as I mentioned before, in the case of “*al-insān*” we do not refer to a subject, a particular substance (a *mushār ilayhi* which is not in a subject), in respect of something outside of its essence; “*al-insān*” refers to a particular substance which is *named* by “*insān*,” i.e., “*insān*” denotes it in respect of its quiddity or it denotes its quiddity. For this reason, when al-Fārābī recapitulates “these four stages of knowledge [*hādhihi al-marātib al-arba ‘ min al-ma ‘arīf*]” at KH 27 75.19-21, he mentions “first, the knowledge of the particular [substance] [*ilm al-mushār ilayhi*], then [the knowledge] that he is this human and this white [thing] [*hādhā*

⁴⁸² Here al-Fārābī speaks of *al-mushār ilayhi*, but from the following discussion it is clear that he means specifically *al-mushār ilayhi alladhī lā fī mawḍū‘*, i.e., a substantial particular specifically, leaving out accidental particulars.

al-abyaḍ], then the human and the white [thing] [*al-abyaḍ*], and then the human and whiteness [*al-bayāḍ*].” We have “the human [*al-insān*]” both in the third and the fourth stages while we have “the white [thing] [*al-abyaḍ*]” in the third stage and “whiteness [*al-bayāḍ*]” in the fourth stage. That said, there is also a way of thinking of “the human” as referring to a composite of a form and a subject, just as “*al-abyaḍ*” refers to *bayāḍ* in a particular substance; this detail is not very important for my purpose, and I will not discuss it here.⁴⁸³

As mentioned above, al-Fārābī follows in this extended account Aristotle’s point made at the beginning of *DI* that language directly symbolizes the mental representations, or thoughts. Since thoughts are universal, al-Fārābī seems to hold also that the terms which denote (*yadullu ‘alā*) something on their own (i.e., nouns (*ism*) or verbs (*kalima*), not particles (*ḥarf*)) denote universally, not in the sense that they refer to several things, but that even when they refer to one particular, they refer not to a *determinate* particular but to an *arbitrary* particular, as we saw above with the likes of “*al-insān*” and “*al-abyaḍ*.” It is congruent with this that al-Fārābī seems to imply at *KH* 27 75.21-6.2 that we *point to* (*nushīru ilā*) a determinate particular thing⁴⁸⁴ and do not *denote it* (*nadullu ‘alā*),⁴⁸⁵ and we express this gesture of pointing to it using a term that denotes along with a demonstrative adjective, e.g., we express our pointing to a *mushār ilayhi* by “*hādhā al-abyaḍ*” and not [by] “*al-bayāḍ*” or “*al-abyaḍ*” simpliciter;” by contrast, we use “*al-*

⁴⁸³ Let me note very briefly that al-Fārābī seems to suggest in *KH* 32-4 that we can understand “*al-insān*” as referring to a form-matter composite. In that case, we would have a complexity of a form’s presence in a subject in the idea expressed by “*al-insān*” similar to the complexity in the idea expressed by “*al-abyaḍ* (the white (thing)).” According to this understanding, we can separate the form from the subject in the idea expressed by “*al-insān*,” just as we separate the form from the implied subject in the idea expressed by “*al-abyaḍ*” and get, as a result, the idea of whiteness (*al-bayāḍ*). If “*al-insān*” is understood in this way as expressing a complexity of the presence of a form in a subject, al-Fārābī suggests that in the case of “*al-insān*” we can call the counterpart of “*al-bayāḍ*” “*al-insāniyya*.” On a related point of whether, e.g., “the human” refers to the form-matter composite, or just the form, compare *Met.* H.3 1043a29-b4.

⁴⁸⁴ As al-Fārābī puts it at *KH* 26 75.4-6, we cannot even directly point to a particular accident, i.e., a *mushār ilayhi* which is in a subject, like this whiteness (*hādhā al-bayāḍ*) which is in, e.g., this wall (assume that it is a particular substance); rather, we directly point to this wall and along with this we can also point to this whiteness in this wall. Of course, our cognitive limitation for directly and independently grasping a particular accident by means of pointing to it in the way that we can grasp a particular substance directly and independently by means of pointing to it does not entail that particular accidents do not exist for al-Fārābī. Rather, in this paragraph, as well as in other places in *KH* and his other works, following the account of the fourfold division of *Cat.* 2 (universal / particular, substance / accident), he speaks of two kinds of *mushār ilayhi*, i.e., particulars that can be pointed to (as it turns out, directly or indirectly): those which are not in a subject (i.e., particular substances), and those which are in a subject (i.e., particular accidents).

⁴⁸⁵ Or if denoting (*dalāla*) is the higher kind and pointing (*ishāra*) is a kind under it, then by “denoting” I mean the sort of denoting which is not pointing.

bayāḍ” and “*al-abyaḍ*” for denoting (*dalāla*) where pointing (*ishāra*) is not sufficient apparently because we cannot point to something universally or arbitrarily.⁴⁸⁶

So, differentiation of features (accidental or essential) takes place in the mind. We saw two stages of differentiation in the mind: first we distinguish different features of the same particular substance and grasp them as referring to that (arbitrary) particular substance, i.e., the first thoughts expressed by, e.g., “the human (*al-insān*),” and “the tall [thing] (*al-ṭawīl*);” we saw that the idea expressed by “*al-ṭawīl*” contains two ideas: the idea of tallness (*al-ṭūl*), and the idea of the implied subject, an indeterminate particular substance in which tallness is present. So, in the next stage of differentiation, we separate the idea of tallness and grasp it on its own. But differentiation takes place only in the mind; in extramental reality, all these features are together. As al-Fārābī puts it at *KH* 26 75.9, a particular substance is not separated from (*yanfakku min*) particular accidents.⁴⁸⁷ That the real features are together without differentiation and differentiation is something undertaken in the mind is also stated in other works by al-Fārābī. At *Attainment* E23, A22 p.144 line 13 – p.145 line 4, he states, “the thoughts [*al-ashyā’ al-ma’qūla*], insofar as they are thoughts, are separated [*mukhallaṣa*] from the conditions [*al-aḥwāl*] and the accidents which belong to them while they exist outside the mind [*wa-hiya mawjūda khārija al-naḥs*]. In what persists as one in number [*tadūmu wāḥidatan bi-l-‘adad*] these accidents do not vary and do not differ [*lā tatabaddalu wa-lā tataḡhayyarū*] at all, but in those which do not persist as one in number but⁴⁸⁸ one in species, they vary.” In other words, taking

⁴⁸⁶ As al-Fārābī presents initially in *KH* 24-7, and as I touched upon in Chapter 1 Section 6, the idea of an accidental kind on its own, like the idea expressed by “whiteness [*al-bayāḍ*],” is a simple idea while the idea of the presence of an accident in a subject, expressed by, e.g., “the white [thing] [*al-abyaḍ*],” is a compound idea. So, the latter idea depends on the former idea in this respect. So, an ideal language which reflects this relation would have a term in the paradigm form (*mithāl awwal*) for the former idea, and a derived term (*mushtaqq*) for the latter idea, and al-Fārābī thinks that the Arabic language by and large follows this rule. As for the idea of a substance, like the idea expressed by “the human [*al-insān*],” since it does not have a similar sort of complexity, in an ideal language, such an idea would be expressed by a term in the paradigm form, and there would not be a term derived from it since a substance is not present in another subject, like an accident. Al-Fārābī thinks that the Arabic language by and large follows this rule too. As I briefly mentioned in Footnote n.483 above, there is another way of thinking about substances and the terms like “*al-insān*” denoting the substances, but the general rules for al-Fārābī are the way I describe them in this footnote.

⁴⁸⁷ That said, since expressions like “*al-abyaḍ*” denote (along with a particular substance which is white) the species of this particular accident, and not this particular accident itself, “[a particular substance] is characterized [*yūṣafu*] only by the species of [a particular accident] since what is denoted by the expression is its species and not itself” (75.10-1).

⁴⁸⁸ The Arabic text in the edition I use, apparently following the mss., has وفي التي لا تدوم واحدة بالنوع، تتبدل but it is clear from the context that even though an extramental particular which persists as one in number has the particular set of conditions and accidents it has, the thought in the mind which persists as one in species has varying conditions and accidents; for this reason, if someone wants to realize a species, e.g., when a builder wants to realize the species of

into consideration also the context of this passage, we can see that a real individual of a species exists together with some particular set of accidents and conditions while another real individual of the same species exists with another particular set of accidents and conditions. Since the thought in the mind which persists as one in species is separated from all the accidents and conditions, the knowledge of this species is not enough for the knowledge of which particular set of accidents and conditions a particular individual of this species would have. Al-Fārābī seems to describe a similar process of differentiation and separation in the mind at *On the Intellect* 16.4-17.4 too.

As we saw so far, according to al-Fārābī the thoughts which are universal are derived ultimately from extramental things which are particulars; so, they causally depend on these extramental particulars. Addressing the ontological status of the universals in relation to their particulars, al-Fārābī says in the *Answers to the Posed Questions* (*Jawābāt li-Masā'il Su'ila 'anhā*)⁴⁸⁹ that “if something has its being [*wujūd*] in actuality by the being [*bi-wujūd*] of something else, its being is in a secondary sense [*wujūduhu 'alā al-qaṣd al-thānī*], and so its being is *per accidens* [*bi-l-'araḍ*]. The being of the general things [*al-ashyā' al-'āmmiyya*], i.e., the universals [*al-kulliyyāt*] are only by the being of the individuals [*al-ashkhāṣ*]; so, their being is *per accidens*. By making this claim I did not mean that [all] the universals are accidents, for [otherwise] it would follow that the universals of the substances are accidents; rather, I claim that their being in actuality and simpliciter is only *per accidens*” (85-6). Also, as I explained in Chapter 1 Section 6, it seems to be implied in *KH* 68 that al-Fārābī interprets Aristotle’s characterization of “primary” (i.e., particular) and “secondary” (i.e., universal) substances in terms of the causal dependence of the thoughts, i.e., universals, on the extramental particulars.

As mentioned above, if the quiddity of X is that which is sought when we ask “what is X” or what is given in response to this question, there are three candidates for a quiddity: the linguistic expression uttered (or written) when someone responds to this question, the mental

the house by building a particular house, he would need to take into consideration which conditions and accidents this particular house will have, and mere theoretical knowledge which is the knowledge of the species will not be enough for this purpose. Since this is what the context clearly suggests, Mahdi proposes to emend the quoted sentence as follows: *واحدة بالعدد بل تدوم* < واحدة بالنوع، تتبدل (see his relevant note at the top of p.154); this mistake can be easily explained as due to homoioteleuton. I agree with Mahdi’s emendation and translated the passage accordingly.

⁴⁸⁹ In Al-Fārābī, *Risālatān Falsafīyyatān* (*Two Philosophical Treatises*), ed. Ja‘far Āl Yāsīn (Beirut: Dār al-Manāhil, 1987), 79-116.

representation directly symbolized by such a linguistic expression, or the underlying extramental thing or feature or fact. Now that we have a clear understanding of the relations between these three according to al-Fārābī's account following Aristotle, we are in a better position to distinguish different things that can be called a quiddity.

As I mentioned above, and briefly explained in Chapter 2 Section 1 Footnote n.318, following Aristotle, al-Fārābī holds that the definition (*ḥadd*) is the formula (*qawl = logos*) of the quiddity (*māhiyya = ti esti* or *to ti ēn einai*). As also mentioned in that footnote, al-Fārābī thinks that the name (*ism*) of something denotes that thing as it is, i.e., makes known (*yu'arrifu*) its quiddity, in a condensed way while its definition denotes it as it is in an articulated way. So, the name of something and its definition denote that thing in respect of its quiddity. Even if what we give as a response to “what is X” question is the definition or the name of X, this is not ultimately what we seek asking this question because we seek a linguistic expression because we want to know about the mental representation and ultimately the underlying extramental thing that this linguistic expression expresses directly or indirectly.

As we saw above, al-Fārābī speaks of conceptualized (*mutaṣawwara*) quiddities and extramental (*khārija al-nafs*) quiddities both in *KW* and *KH*. In passages like *KH* 91 quoted above as T4, al-Fārābī explicitly talks about the conceptualized quiddity of the likes of the void, presumably because he is interested drawing a sharp contrast between extramental quiddities and conceptualized quiddities there, but apart from these *merely* conceptualized quiddities, it seems that he would also consider the mental representation of an extramental quiddity a conceptualized quiddity. In any case, at *KH* 76 107.12, al-Fārābī explicitly talks about the obtainment (*taḥṣīl*) of the quiddity of the same thing as a quiddity which is thought in the mind (*māhiyya ma'qūla fī al-nafs*) and its obtainment extramentally (*khārija al-nafs*);⁴⁹⁰ the latter should be the extramental quiddity and the former should be the conceptualized quiddity of that extramental quiddity.

As al-Fārābī puts it in *KH* 169, what we initially seek with the question “what (*mā*) is it” is the conceptualized quiddity of that thing: “the particle ‘what [*mā*]' might be attached to a simple expression [*lafẓ mufrad*] which was known to denote something but the species and the genus

⁴⁹⁰ Also compare *KH* 78 109.13: “... in order for its quiddity to obtain as a real [quiddity] [*mawjūda*] or as a [quiddity] which is thought [*ma'qūla*].”

primarily denoted by [that expression] was not known, and what is sought by it is nothing but the understanding [*tafahhum*] of the meaning [*ma 'nā*] of the species denoted by that expression and its conceptualization [*taṣawwuruḥu*] and its establishment [*iqāmatuḥu*] in the soul” (169.16-9). In other words, we know at the outset that an expression refers to our object of inquiry, but we do not have the correct mental representation of this thing as it is and this is what we seek directly in our inquiry. As I described in detail in Chapter 1 Section 6, al-Fārābī presents three stages of scientific inquiry through three questions. I will remind the reader of the questions which have *mawjūd* used in one-place contexts here, but the discussion of the same questions with *mawjūd* used in two-place contexts can be found in Chapter 1 Section 6. Accordingly, we start from the nominal definition of something, i.e., the formula explaining its name (*qawl shāriḥ li-smihi*). Let’s assume that this nominal definition, i.e., the nominal definiens is XY; we ask whether (*hal*) XY exists (*mawjūd*). In this first ‘whether (*hal*)’ question, “*mawjūd*” is used in the sense of being as true. If this nominal definition is the nominal definition of a merely conceptualized quiddity which is not instantiated in reality, like the quiddity of the void, then we say no to this question because this concept is not instantiated in reality. There is no further positive scientific investigation of, e.g., the void, because a scientific investigation is the investigation of the causes and what does not exist in reality does not have causes to be investigated. If the answer to this first ‘whether’ question is yes, we proceed to the second ‘whether’ question. Using the same expression, XY, we ask again whether XY exists (*mawjūd*). This time, “*mawjūd*” is used in the sense of being by virtue of circumscription by an extramental quiddity, and we say yes to this question if the expression, XY, refers to this extramental thing in respect of its quiddity. If we say yes to both ‘whether’ questions, we go on to investigate what this thing is, i.e., we investigate the causes by which this thing subsists. As a result of this process, we obtain the real definition of this thing. Let’s assume that the only biped animals are humans and birds. We say yes to the first ‘whether’ question if the expression we start with is “non-bird biped animal;” we answer affirmatively the question of whether there are (*mawjūda*) non-bird biped animals because “non-bird biped animal” is a description (*rasm*) of humans. So, the mental representation or thought directly expressed by the nominal definition “non-bird biped animal” is instantiated in reality. But we say no to the second ‘whether’ question because “non-bird biped animal” does not refer to humans in respect of their real quiddity. But if the expression we started with was “rational animal” (assuming that this is the correct definition of humans), we would say yes to both

‘whether’ questions, and it would turn out that that by which humans subsist as humans are cited in this expression so that we would see in the end that this expression is their real definition, and the conceptualized quiddity or the mental representation directly expressed by this expression is not a merely conceptualized quiddity but it is the conceptualization of the extramental quiddity of humans. In the rest of *KH* 169, al-Fārābī describes this process with small differences.

We start with the nominal definition corresponding to a term which we know to refer to our object of inquiry, and we seek the conceptualization of the extramental quiddity of this object of inquiry. Our scientific investigation is brought to completion successfully when we establish in our soul the conceptualized quiddity of the extramental quiddity of our object of inquiry, and this conceptualized quiddity is directly expressed by the real definition of our object of inquiry. Since the conceptualized quiddity is a thought or a mental representation, it is universal. Al-Fārābī claims that a particular extramental thing and its thought which is universal are in some sense identical; as he puts it, a universal substance is the thought (*ma ‘qūl*) of a particular substance, e.g., the human species is the thought of a particular human being, “and the thought of a thing is this very thing [*ma ‘qūl al-shay’ huwa al-shay’ bi- ‘aynihi*], but its thought is this thing insofar as it is in the soul while the thing is this thought insofar as it is outside the soul” (*KH* 67 101.10-2). But it is clear that they are not identical in every respect. To begin with, the thought of an extramental thing causally depends on that extramental thing but not the other way around. Moreover, the secondary thoughts attach to the primary thoughts insofar as these primary thoughts are in the soul, but the secondary thoughts do not attach to extramental things. So, it is correct to say that a conceptualized quiddity is universal, but strictly speaking, it is not correct to say that an extramental quiddity is universal, because being universal is a secondary thought which only applies to things in the mind, not to extramental things. Of course, even if we strictly observe this rule about what things can be called universal and do not say that an extramental quiddity is universal, it can still be true that the extramental quiddity of the things in the same species can be intrinsically indistinct, and hence there would be no individual extramental quiddities. My point here is just that an extramental quiddity and its conceptualized quiddity are not the same in every respect, and the fact that conceptualized quiddities are universal should not make us assume that, e.g., the extramental quiddity of Socrates is the same as the extramental quiddity of Plato in every respect intrinsically speaking so that their quiddities are not intrinsically distinct but only relationally distinct, i.e., humanity in relation to Socrates (or his

matter) is called the quiddity of Socrates, and humanity in relation to Plato (or his matter) is called the quiddity of Plato, but intrinsically speaking, it is the same humanity.

So, I think that the main reason behind assuming that al-Fārābī takes quiddities to be universal is that conceptualized quiddities are indeed universal and definitions are directly expressions of conceptualized quiddities, and if the quiddity (*māhiyya*) of X is what is sought by the question “what is X (*mā huwa X*)” or what is given in response to this question, it seems natural to think immediately of the conceptualized quiddity of something as its quiddity. However, as I explained above, the extramental quiddity of something is clearly different from its conceptualized quiddity, and just because, e.g., the conceptualized quiddity of Socrates is the same as the conceptualized quiddity of Plato, which is the thought of humanity, we do not have to assume that the extramental quiddity of Socrates is also intrinsically the same as the extramental quiddity of Plato. No doubt, the extramental quiddity of Socrates must have a common core with the extramental quiddity of Plato; otherwise, there would be nothing real that causally grounds our correct thought of humanity which is equally shared by Socrates and Plato, but again, this does not entail that the quiddity of Socrates is *entirely* the same as the quiddity of Plato in every respect, intrinsically speaking.

Next, I want to consider the textual evidence supporting the view that al-Fārābī is likely committed to the existence of individual quiddities; after this, I will quickly review the passages from al-Fārābī that seem to go against this view, and I will finally point out how these passages that seem to go against this view can be explained away. As I stated above, I do not defend that the textual evidence *clearly* favors this view; rather, my aim is to undermine the resistance against this view and fortify its persuasiveness.

The first passage I want discuss for this purpose is from *KW* 64. In this paragraph, al-Fārābī first talks about the senses of unity by virtue of circumscription by a place and by an extremity, and then he talks about the sense of unity by virtue of circumscription by a quiddity. Apparently still talking about circumscription by a quiddity, he says,

T8 *KW* 64 78.7-79.1 = 65.9-15

والذي ماهيته ليست بمشتركة حتى يكون بها تشابه بين اثنين فإنه أيضا منحاز بماهية ما، وليست وحدته إلا لأجل انحيازه بذاته، فتقسمه⁴⁹¹ بأنه أتم انحيازا وأتقن⁴⁹² أداء من المحمول المشترك. فإن معنى الإنسان على الإطلاق منحاز منفرد⁴⁹³ عما ليس بإنسان مثل الفرس وغيره، وهذا الإنسان هو منحاز عن ذلك الإنسان انحيازا أكمل من انحياز الإنسان عن الفرس، والإنسان⁴⁹⁴ أكمل انحيازا من الحيوان، وكذلك كل نوع فهو أكمل انحيازا من جنسه.

[1] [As for] that whose quiddity is not shared so that [if the quiddity were shared], through [the quiddity] there would be a similarity between two things, it is also circumscribed by a certain quiddity, and its unity is nothing but on account of its circumscription by its essence [*bi-dhātihi*], [2] so its division [from the other, i.e., the differentiation of the case with a not shared quiddity from the case with a shared predicate] is by the fact that it is more complete in terms of circumscription and more perfect [*atqan*] in terms of fulfilling its function [*adā'an*] than a shared predicate. [3] For the feature [*ma'nā*] of the human simpliciter is circumscribed and separated from that which is not human like the horse and so on, and this human is circumscribed from that human with a more perfect circumscription than the circumscription of the human from the horse, and the human is more perfect in terms of circumscription than the animal; likewise, each species is more perfect in terms of circumscription than its genus.

In (1) al-Fārābī states that if something has a quiddity it does not share with anything else, it is said to be circumscribed by a quiddity, and in this case, it is said to be one by virtue of being circumscribed by a quiddity because it is circumscribed by its essence (*dhāt*). There are some textual issues with (2) but the basic sense of this clause should be something along the lines of my explanation of it above, namely that the case with a not shared quiddity differs from the case

⁴⁹¹ MS. A has فيقسمه; MS. C has the same but without the dots above ق, and MS. B has . Both editors print فيقسمه. The sense of this clause should be as I indicate in my translation, namely that the case with a not shared quiddity is distinguished from the case with a shared predicate by virtue of the fact that the former is more complete in terms of circumscription and more perfect in terms of fulfilling its function than a shared predicate. I thought that تقسيمه would be closer to this sense; that said, I am not satisfied with this reading either, but I could not find a better emendation.

⁴⁹² MSS. A and C have أبقي and MS. B has the same *rasm* without the diacritics. Mahdi prints أبقي but Martini Bonadeo and her team propose to emend this into أتقن, and I think their reading makes a somewhat better sense given the context, and I adopted their reading.

⁴⁹³ MS. A has مفرد and MSS. B and C have منفرد. Martini Bonadeo and her team adopt the first reading while Mahdi adopts the second reading. I follow Mahdi here, but the reading adopted by Martini Bonadeo and her team also give more or less the same meaning.

⁴⁹⁴ The و before الإنسان here is omitted by Martini Bonadeo and her team apparently by mistake because this و is in all the mss. and the mss. reading is not noted in the apparatus in the edition by Martini Bonadeo and her team.

with a shared predicate in that the former affords more complete circumscription and does its job of circumscribing and separating that thing more perfectly than the shared predicate because, e.g., humanity distinguishes Socrates from other non-humans but it falls short of distinguishing him from other humans, whereas if Socrates has an individual quiddity he does not share with anything else, including other individual humans, Socrates is circumscribed by his individual quiddity more completely than his special quiddity, i.e., humanity that he shares with other human individuals. In (3), al-Fārābī seems to make this point. The circumscription of an individual from another individual under the same species is more perfect than the circumscription of the species from another species under the same genus, and this is more perfect than the circumscription of the genus from another genus under the same higher genus. It is true that when al-Fārābī talks about the circumscription of this human from that human in (3), he does not explicitly say that this human is circumscribed from that human *by his individual quiddity* that he does not share with anything else, including the other human, but this seems to be implied from the context.

We also find a qualified textual support for individual quiddities in *KW* 83. Recall that as I quoted above, speaking generally of this sense of unity, al-Fārābī states that something is one according to this sense of unity “by virtue of the fact that it is circumscribed by a certain quiddity from things other than itself among what has a quiddity [‘*ammā siwāhu mim mā lahu māhiyya*].” There is no restriction in this claim on what it is circumscribed from. According to this sense of unity, X is one because X is circumscribed by a quiddity from anything that has a quiddity. So, Socrates should also be circumscribed from Plato because Plato has a quiddity, just like Socrates. As I argued above, and as Option II.b and II.c agree, when al-Fārābī asserts that something is circumscribed by a quiddity (*māhiyya mā*), it is likely that he does not mean simply any feature, be it accidental or essential, but he means its quiddity in the usual sense of the word, i.e., its essential features or some of its essential features. The difference between Option II.c and II.b depends on whether he *simply* means its quiddity, or he means its quiddity plus some accidents. So, in the case of, e.g., Socrates’ circumscription from Plato by a quiddity, if by “a quiddity” al-Fārābī does not mean Socrates’ quiddity plus some of his accidents the conjunction of which distinguishes Socrates from other humans as Option II.b has it, and if he instead means simply what he seems to be saying, namely that Socrates is circumscribed by his quiddity from

everything else which has a quiddity, Socrates' quiddity would be his individual quiddity and would not be the same as the quiddity of, e.g., Plato.

There is at least one passage in *KH* that also suggests al-Fārābī's commitment to the existence of individual quiddities. Apparently talking about the sense of non-being (*ghayr mawjūd*) that is the opposite of the sense of being (*mawjūd*) as circumscribed by an extramental quiddity used in two-place contexts, al-Fārābī says in *KH* 100, "the opposite of being [*al-mawjūd*] which is said in relation to [*bi-l-qiyaṣ ilā*] something else is non-being [*ghayr al-mawjūd*] which is said in relation to something else. For we say 'Zayd does not exist as 'Amr [*Zayd ghayr mawjūd 'Amran*]' and 'the wall does not exist as a human [*al-ḥā'it ghayr mawjūd insānan*]' and 'the bed does not exist from nature but [it exists] from art' [*al-sarīr ghayr mawjūd 'an al-ṭabī'a bal 'an al-ṣan'a*], meaning 'the quiddity of the bed is not acquired [*mustafāda*] from nature.' It is like this in the remaining cases, [e.g.,] we mean 'Zayd's quiddity is not 'Amr's quiddity'⁴⁹⁵." So, when we say that Zayd *ghayr mawjūd* as 'Amr, we mean that Zayd's quiddity is not the same as 'Amr's quiddity. This implies that Zayd and 'Amr have their own individual quiddities which they do not share with the other human individuals.

Now, let me review the textual evidence that seems to be against attributing to al-Fārābī the view that individual quiddities exist. First of all, something al-Fārābī says in *KW* 75 seems to go against individual quiddities but it does not have to be interpreted to that effect. In *KW* 75 and the surrounding passages, al-Fārābī talks about the senses of multiplicity opposed to each sense of unity. At the beginning of *KW* 75, he talks about the sense of multiplicity which is opposed to the sense of unity by virtue of having the same definition (which is equivalent to the one in species⁴⁹⁶): "[as for] those which are one by virtue of the formula denoting them [i.e., by their definition], they would be many [in the sense of multiplicity opposed to this sense of unity] only by virtue of the fact that their quiddities are many [*fā-innamā takūnu kathīratan bi-an takūna māhiyyatuhā kathīratan*]" (86.4-5 = 70.15-6). Since the opposite of the one by virtue of having

⁴⁹⁵ Mahdi prints ما هو زيد ليست ماهية عمرو and وكذلك في الباقي، نعني ما هو زيد ليست ماهية عمرو at lines 10-11. I cannot think of any other way to make sense of this sentence in its context but to assume that ما هو زيد is the subject of ليست and ماهية عمرو is its object or ما هو زيد is the subject of ليست and we should insert به as the object of ليست referring back to ما هو زيد. In the former case, either we should emend ليست into ليس or we should emend ما هو into ماهية; I opted for the second but even if it is the first, we would get more or less the same meaning as ما هو of X can be used to mean the same thing as its ماهية. In the latter case, this clause would still have the same meaning, though with the object and the subject of ليست flipped: "'Amr's quiddity is not Zayd's quiddity."

⁴⁹⁶ More on this equivalence, see Chapter 2 Section 1.

the same definition is the multiplicity of things which have different definitions, it might appear at first sight that al-Fārābī claims here that having the same definition is equivalent to having the same quiddity. If this were the case, since Socrates and Plato have the same definition, they would also have the same quiddity. However, this is not exactly what al-Fārābī says. Instead, he states that in order for us to have things which have different definitions, we must have things which have different quiddities. In other words, having different quiddities is a necessary condition for having different definitions, but it is not stated clearly in this passage that it is also a sufficient condition. So, what is stated in this passage, strictly speaking, is compatible with individual quiddities because the claim does not seem to be that if things have different quiddities, they will also have different definitions. If this were the case, since Socrates and Plato have different quiddities according to the individual quiddities view, they would also have different definitions, but the defenders of the individual quiddities view would also grant that they have the same definition (“rational animal,” or whatever is the correct definition of humans). Rather, the claim seems to be only that things have different definitions only if they have different quiddities. This holds also according to those who grant the existence of individual quiddities; if we consider two individuals, and if they have different definitions, they must have different quiddities because if two individual things have the same quiddity, they must be the same individual thing, but then the same thing cannot have different definitions.

That said, there are indeed passages in *KW* and *KH* which appear to suggest against the existence of individual quiddities. Perhaps the most important passages in this regard are *KW* 78 and *KH* 89. As discussed above, talking about the circumscription of, e.g., the human species from the other animal species, al-Fārābī says that that by which a species is circumscribed from others is the quiddity proper to it (*māhiyya yakhuṣṣuhu*) and this is its differentia. In a related passage, in *KH* 89, al-Fārābī specifies what the *wujūd* of X is when we say that X is *mawjūd* according to a given sense of being; in particular, in the sense of being as circumscribed by an extramental quiddity, the relevant *wujūd* is the quiddity of this thing, and if this thing has a divided quiddity, its *wujūd* is “the explained [*mulakhkhaṣa*] quiddity of that thing [i.e., the real counterpart of the definition] or each part of the whole, [i.e.,] either its genus or its differentia, and since its differentia is more specific [*akhaṣṣ*] to it, it is more appropriately [this thing’s] being which is proper to it [*wujūdahu alladhī yakhuṣṣuhu*]” (117.2-4). In the context of this passage, there is nothing which suggests that al-Fārābī talks specifically about the kinds and their quiddities, not

individuals. Rather, al-Fārābī seems to make a general point about the *wujūd* of something according to the sense of being as circumscribed by an extramental quiddity. We saw that strictly speaking what is said to be a species or a genus is a thought, not an extramental thing, and it should also be similar with the differentia. It seems that by an “explained quiddity” al-Fārābī means something like the species as conceived as genus + differentia. So, strictly speaking, a differentia or a genus cannot be an extramental thing, and hence, their combination cannot be an extramental quiddity either. However, although al-Fārābī himself sometimes demands this sort of terminological purity, he does not always observe it, and we can reasonably assume that he talks about the real counterparts of the genus and the differentia in *KH* 89. And since he explicitly talks about the genus and the differentia, this could be taken as an indication of the view that just like, e.g., Socrates and Plato have the same genus and the same differentia, they also have the same extramental quiddity. We can find other passages in *KH* where al-Fārābī talks about the quiddity of something which is said to be (*mawjūd*) in the sense of being as circumscribed by an extramental quiddity and the *wujūd* of this thing is suggested to be universal or an extramental feature shared by all the individuals under the same species.

As I argued above, there is a sense in which the quiddities are universal. That is to say, the conceptualized quiddities are universal. This is agreed both by the defenders of Option II.b and the defenders of Option II.c. So, in a sense, the defenders of Option II.c can also account for al-Fārābī’s claims that apparently go against Option II.c by saying that in these passages, al-Fārābī talks about conceptualized quiddities, or he loosely talks about extramental quiddities as if, like the conceptualized quiddities, the extramental quiddities of the individuals under the same species are the same in every respect, intrinsically speaking. These ways of explaining away the passages that seem to go against Option II.c do not always present the most natural readings of these passages, but at least these are understandable ways of the defenders of Option II.c to account for these passages. However, it seems harder for the defenders of Option II.b to account for the passages which seem to suggest individual quiddities; the defenders of Option II.b can say that in those passages, by “quiddity” al-Fārābī does not mean what he says, but he means quiddity plus some accidents the conjunction of which uniquely picks out the individual under consideration. It seems to me that this interpretation of the passages in favor of Option II.c by the defenders of Option II.b is less persuasive than the interpretation of the passages against Option II.c by the defenders of Option II.c briefly described above. So, all considered, I believe that

there are stronger reasons favoring Option II.c over Option II.b even though the evidence for *clearly* establishing Option II.c as opposed to Option II.b is lacking.

Section 2: Ancient Greek background to al-Fārābī's senses of unity by virtue of circumscription
I spelled out in the previous section what al-Fārābī means when he says that something is one by virtue of being circumscribed by an extremity, or a place, or a quiddity. In this section, I discuss the earlier Greek sources which seem to be in the background of al-Fārābī's idea of circumscription.

Let me first clearly lay out my two theses about how al-Fārābī developed his account of the senses of unity by virtue of circumscription. Then I will present my analysis of the Greek texts in support of these two theses. In this way, the reader would have a clear idea of the claims I defend, and she would be well-positioned to assess how well the textual evidence supports the claims that I defend they support. The first thesis concerns al-Fārābī's precursors in ancient Greek philosophy. As I try to show below, although there are several passages in Aristotle and the late antique Greek philosophers which al-Fārābī could use as sources of inspiration or starting points for articulating the senses of unity by virtue of circumscription or the passages in which al-Fārābī could find confirmation of his ideas, there is nothing in Aristotle or the late antique Greek philosophers I could detect that contained *so developed* an idea of unity by virtue of circumscription that we can justifiably claim that al-Fārābī directly borrowed or simply adapted that idea from that Greek source. So, my position is that the senses of unity by virtue of circumscription we see in al-Fārābī's *KW* are al-Fārābī's own product even though, as I detail below, al-Fārābī did not develop these ideas out of thin air.

My second thesis concerns the internal development of the different senses of unity by virtue of circumscription. As I stated in the previous section, I think that it is more likely that al-Fārābī first developed the senses of unity by virtue of *physical circumscription* and based on this, he articulated the sense of unity by virtue of *circumscription by a quiddity* than the other way around. I do not mean that in the time interval t1 al-Fārābī fully developed his views on the senses of unity by virtue of physical circumscription, and after the completion of that project, in a later time interval t2 he fully developed the sense of unity by virtue of circumscription by a

quiddity. Rather, what I mean is that his thoughts on the senses of unity by virtue of circumscription was initially prompted and dominated by his reflections on physical circumscription rather than his reflections on circumscription by a quiddity. I presented a general philosophical reason for the second thesis in the previous section; in this section, I present another reason for this thesis drawing on the potential sources for al-Fārābī's ideas of unity by virtue of circumscription in earlier Greek philosophical texts.

My main textual evidence for these two theses is drawn from my analysis of a number of texts from Aristotle, late antique Aristotle commentaries, and Galen. I should note at the beginning that of the wider range of Greek texts that I inspected, the Greek texts discussed below are the ones that are the most relevant for al-Fārābī's account of the senses of unity by virtue of circumscription. The first thesis outlined above has two parts: the negative part is that al-Fārābī did not simply take or adapt his idea of unity by virtue of circumscription from any of the Greek texts discussed below. Most of these Greek texts do not explicitly talk about unity, and the ones that do are either inchoate or different enough from al-Fārābī's senses of unity by virtue of circumscription that we are not justified to say that al-Fārābī simply took or adapted his ideas from those Greek texts. However, there are ways of constructive engagement with a philosophical text other than simply taking or adapting an idea from it. This brings me to the positive part of my first thesis. I argue that there are several passages in Aristotle and the late antique Greek philosophers that contain ideas relevant for fully appreciating al-Fārābī's ideas of unity by virtue of circumscription. The oldest passage is from the very beginning of Aristotle's *Physics* IV.2 on the proper place of a body. Given al-Fārābī's close engagement with Aristotle, it is very likely that al-Fārābī's reflections on this passage directly played an important role in al-Fārābī's analysis of the relation between a body and its proper place to spell out the idea of physical circumscription.⁴⁹⁷

After Aristotle, I discuss a number of passages from late antique Greek philosophers, mostly from commentaries on Aristotle's works, including commentaries on *Physics* IV. What is common to these passages is that the Greek verb "*perigraphō*" or the related words like the noun "*perigraphē*" are used to express an idea which is very similar to the idea expressed by al-Fārābī

⁴⁹⁷ See Appendix: Availability of *Phys.* IV.

using the Arabic word “*inḥiyāz*” or the related words.⁴⁹⁸ Moreover, as argued below, al-Fārābī could have access to these passages. So, I contend that al-Fārābī is likely to have found starting points for developing his ideas for unity by virtue of circumscription in these passages or he is likely to have found confirmations of the ideas he developed independently in these passages. Although we know al-Fārābī’s extensive debt to the Greek commentators, it is reasonable to expect a marked difference between al-Fārābī’s attitude towards Aristotle and his attitude towards the commentators. I have only little doubt that al-Fārābī considered *Physics* IV.2 carefully; even if al-Fārābī read all the other late antique Greek passages mentioned below, I cannot say with the same level of certainty that he considered all of them as carefully as he considered Aristotle’s *Physics* IV.2. This is simply due to the immense authority that Aristotle carried for philosophers like al-Fārābī. Al-Fārābī did not accept everything that Aristotle said. In fact, his views diverged from Aristotle in important respects and in the previous chapter and in the present chapter I explained and am explaining two of the important differences in al-Fārābī’s account of the senses of unity compared with Aristotle’s account. Such divergences can be found in other works by al-Fārābī too. To be clear, in *KW* when al-Fārābī’s views diverge from Aristotle’s by replacing some ideas in Aristotle with some ideas of his own (like the sense of unity *qua* the first measure of a class in Aristotle and the sense of unity by virtue of circumscription by a quiddity in al-Fārābī), or by transforming some ideas in Aristotle radically (like the sense of unity in number), al-Fārābī does not explicitly remark on the fact that he presents his account on a topic in a way significantly different from the way in which Aristotle presents his account on that topic. As it should become clear in the previous chapter and in the present chapter, al-Fārābī starts from Aristotle’s account of the senses of unity, primarily from *Met.* Δ.6, but makes radical changes to it, and al-Fārābī has his own reasons to make these changes as improvements to Aristotle’s account in his eye; so, al-Fārābī’s views on unity in *KW* that differ from Aristotle’s corresponding views on unity are tacit witnesses to what al-Fārābī found as shortcomings in Aristotle’s account. Nonetheless, al-Fārābī does not *explicitly* criticize

⁴⁹⁸ My supervisor, Stephen Menn, suggested to me that “*perigraphēin*” might be relevant for understanding al-Fārābī’s “*inḥiyāz*” and encouraged me to investigate it further. This section presents the positive results of this investigation. I conducted my research mainly by inspecting the results for lemma and proximity searches on TLG for “*perigraphēin*,” “*periorizein*,” and “*aphorizein*” and some related words; of these, the results for “*perigraphēin*” and some related words turned out to contain the greatest number of passages expressing ideas similar to the idea al-Fārābī expresses using “*inḥiyāz*,” I present below in detail some of these passages which seem to have been available in Arabic.

Aristotle in *KW*, or in any of the other works discussed in this dissertation, if my memory does not fail me.

In short, my first thesis has two conjuncts. First, I defend that it is hard to deny that al-Fārābī read and reflected on *Physics* IV.2 and the thoughts he developed from his reading of *Physics* IV.2 contributed to his articulation of his idea of physical circumscription. The second conjunct concerns the rest of the ancient Greek texts discussed below, which are from late antique Aristotle commentaries and from Galen. Based on the evidence for the availability of these passages to al-Fārābī and given the similarities in content between these passages and al-Fārābī's views concerning the idea of circumscription, I suggest that al-Fārābī probably engaged at least with some of these passages. Given those reasons, I think it is extremely unlikely that none of these passages played a role in al-Fārābī's articulation of his ideas of circumscription and so his account of the senses of unity by virtue of circumscription. It is possible that al-Fārābī engaged with *all* these passages, but since my argument does not depend on very strong evidence but only evidence for high likelihood for al-Fārābī's engagement with each passage, the likelihood of al-Fārābī's engagement with *all* these passages might be smaller than the likelihood of his engagement with *some* of these passages.⁴⁹⁹ Al-Fārābī's engagement with these passages either

⁴⁹⁹ Let me illustrate what I mean with a simple model. Let's assume that we have three events: E1: al-Fārābī engages with text 1; E2: al-Fārābī engages with text 2; E3: al-Fārābī engages with text 3. For the sake of argument, we can assume that these are independent events. Let's assume that each event has the same probability p . The probability of the case that none of these events happens (P_0) is $(1-p)^3$. The probability of the case that exactly one of these events happens (P_1) is $3 \cdot p \cdot (1-p)^2$. The probability of the case that exactly two of these events happen (P_2) is $3 \cdot p^2 \cdot (1-p)$. The probability of the case that all three events happen (P_3) is p^3 . So

if $p < 1/4$, $P_0 > P_1 > P_2 > P_3$.

If $p = 1/4$, $P_0 = P_1 > P_2 > P_3$.

If $1/4 < p < (\sqrt{3}-1)/2$ (≈ 0.37), $P_1 > P_0 > P_2 > P_3$.

If $p = (\sqrt{3}-1)/2$, $P_1 > P_0 = P_2 > P_3$.

If $(\sqrt{3}-1)/2 < p < 1/2$, $P_1 > P_2 > P_0 > P_3$.

If $p = 1/2$, $P_1 = P_2 > P_0 = P_3$

If $1/2 < p < (3-\sqrt{3})/2$ (≈ 0.63), $P_2 > P_1 > P_3 > P_0$

If $p = (3-\sqrt{3})/2$, $P_2 > P_3 = P_1 > P_0$

If $(3-\sqrt{3})/2 < p < 3/4$, $P_2 > P_3 > P_1 > P_0$

If $p = 3/4$, $P_3 = P_2 > P_1 > P_0$

If $p > 3/4$, $P_3 > P_2 > P_1 > P_0$

So, if the probability for each event to occur is less than $3/4$, the probability of the case that all three occur does not have the highest probability compared to the other options. I do not mean that this sort of probabilistic modelling captures the correct way to think about the relation between the epistemic strength of the piece of evidence for each claim in isolation and the epistemic strength of all those pieces of evidence collectively for the conjunction of those claims. I offered this probabilistic model to caution the reader that the fact that we have better evidence for each interpretive claim than its negation independently might not entail that we have better evidence for the conjunction of those interpretive claims than the other options, i.e., that only some of those claims hold.

consisted in using them as starting points for the development of his account of the senses of unity by virtue of circumscription or it consisted in finding confirmations of various aspects of that account he had been developing independently. So, I argue that al-Fārābī developed his ideas of unity by virtue of circumscription himself, but our understanding of how al-Fārābī did that would be incomplete without taking into consideration the ancient Greek texts discussed below.

My second thesis about the direction of al-Fārābī's development of his senses of unity by virtue of circumscription is also *partially* supported by my analysis of these Greek texts. As I pointed out in the previous section, al-Fārābī stresses that the senses of unity by virtue of circumscription by a place and by an extremity apply only to bodies while the sense of unity by virtue of circumscription by a quiddity applies to everything. We face two reasonable scenarios to explain how al-Fārābī developed his senses of unity by virtue of circumscription. The first scenario has it that al-Fārābī first developed the idea of physical circumscription, i.e., by a proper extremity or by a proper place, and then he extended this idea of circumscription by a place or an extremity to the idea of circumscription by a quiddity. The second scenario has it the other way around: al-Fārābī first developed the idea of circumscription by a quiddity, which is more abstract (i.e., without a noticeable conceptual work we cannot grasp it with relative ease) and has a wider scope of application (i.e., it applies to everything, corporeal or incorporeal), and then he analogically developed the idea of circumscription by a quiddity into the idea of physical circumscription, which is less abstract (i.e., without a noticeable conceptual work we can grasp it with relative ease) and has a narrower scope of application (i.e., it applies only to bodies). As I tried to illustrate in the previous section, understanding the sense of unity by virtue of physical circumscription through an analysis of the relation between a body and its proper place or extremity appears easier than understanding the more abstract idea of circumscription by a quiddity. So, I argued in the previous section that if it is easier *for anyone with the requisite philosophical knowledge and interest* to understand physical circumscription first and then circumscription by a quiddity using that idea rather than the other way around, barring other evidence, it is more likely *for a philosopher*, like al-Fārābī, to first grasp the first idea and develop the second idea from it than the other way around. This philosophical reason weighs in favor of the first scenario. Another, and this time a textual reason in favor of the first scenario is that there are passages in Aristotle and the late antique Greek philosophers that provide a *clear* point of departure for al-Fārābī's articulation of the senses of unity by virtue of physical

circumscription, most notably the *Physics* Book IV passage discussed below, while there is nothing in Aristotle or in the late antique Greek philosophers, as I discuss below, that could function as a *similarly clear* point of departure for the articulation of the sense of unity by virtue of circumscription by a quiddity. In short, I provide two reasons supporting the second thesis: according to the reason I tried to motivate in the previous section, *a philosopher in general* would find it easier to articulate the idea of physical circumscription first and then analogically extend that idea into the idea of circumscription by a quiddity than the other way around; according to the reason I try to motivate in this section, *a philosopher working in al-Fārābī's tradition and working with the sorts of texts that he was working with* would also find it easier to articulate the idea of physical circumscription first and then analogically extend that idea into the idea of circumscription by a quiddity than the other way around.

Before I move on to a detailed discussion of the mentioned Greek texts, to avoid any misunderstanding, I want to take the risk of repetition and emphasize that I defend two *related but separate* claims based on my reading of the Greek texts discussed below. The first claim is what I called the first thesis above: although al-Fārābī did not take or adopt his ideas of unity by virtue of circumscription from those texts, he most probably used the beginning of *Physics* IV.2 as a starting point, and he is likely to have used some or perhaps all of the other passages discussed below as starting points for developing his ideas or he found confirmations in them for the ideas he developed independently. So, these passages add something important to our appreciation of al-Fārābī's account of unity by virtue of circumscription. The second claim I defend is that starting from the *Physics* IV.2 passage on the proper place, commentaries on *Physics* IV or Galen on the proper *perigraphē* of a body provided *clear* starting points for al-Fārābī's articulation of his idea of unity by virtue of physical circumscription, while we do not find a passage among the ones discussed below that could serve as a *similarly clear* starting point for al-Fārābī's articulation of his idea of unity by virtue of circumscription by a quiddity.

Although I defend that the second claim is also supported by the textual evidence, I want to remind the reader who is not convinced by the second claim that the denial of the second claim does not have a bearing on the acceptance of the first claim.⁵⁰⁰

⁵⁰⁰ To repeat, I motivate two reasons to support my second thesis that al-Fārābī *first* developed his idea of physical circumscription and *then* from it he developed his idea of circumscription by a quiddity, rather than the other way around. The second reason is the second claim mentioned above. If the reader denies the second claim, the denial of

a. Physical circumscription

Aristotle's description of the proper place at the beginning of *Physics* IV.2 provides a natural place to start reflecting on the relation between a body and its proper place.⁵⁰¹ In the first chapter of Book IV, Aristotle spells out and discusses some difficulties about the existence of place and what place is. In the second chapter, he continues to elaborate on the difficulties concerning what place is and spells out some candidates for defining place. The first candidate he presents is the form. Aristotle sets out to explain why the form looks like an attractive candidate to define place as. For my current purpose, this issue is not important. I just want to focus on the way that Aristotle describes the common versus the proper or primary place of a body. Aristotle says at the very beginning of *Physics* IV.2,

T1 *Phys.* IV.2 209a31-b1

Ἐπεὶ δὲ τὸ μὲν καθ' αὐτὸ τὸ δὲ κατ' ἄλλο λέγεται, καὶ τόπος ὁ μὲν κοινός, ἐν ᾧ ἅπαντα τὰ σώματά ἐστιν, ὁ δ' ἴδιος, ἐν ᾧ πρῶτον (λέγω δὲ οἷον σὺ νῦν ἐν τῷ οὐρανῷ ὅτι ἐν τῷ ἀέρι οὗτος δ' ἐν τῷ οὐρανῷ, καὶ ἐν τῷ ἀέρι δὲ ὅτι ἐν τῇ γῇ, ὁμοίως δὲ καὶ ἐν ταύτῃ ὅτι ἐν τῷδε τῷ τόπῳ, ὃς περιέχει οὐδὲν πλέον ἢ σέ)...⁵⁰²

Since something is said either in respect of itself or in respect of another, and some place is common, in which all bodies are, while some place is proper [*ho (topos) ho idios*], which is the primary [one] in which [each body is] (I mean, for example, that you are now in the heaven [*ouranos*])⁵⁰³ because [you are] in the air and it is in the heaven; [you

it would have an impact on the strength of my second thesis, but that would not be enough to completely undermine my second thesis because my second thesis is supported also by another reason, motivated in the previous section, namely that it is easier for a philosopher to conceive the idea of physical circumscription first and then the idea of circumscription by a quiddity from it rather than the other way around.

⁵⁰¹ That Aristotle's account of proper place might be relevant for al-Fārābī's idea of physical circumscription was also suggested to me by Robert Roreitner.

⁵⁰² In Ishāq's translation contained in Aristotle et al., *Aristutālīs: Al-Ṭabī'a (Aristotle: The Physics)*, ed. Abdel Rahman Badawi, 2 vols. (Cairo: Al-Markaz al-Qawmī li-l-Tarjama, 2007), p.285 lines 6-12: ولما كان بعض الأشياء يقال بالذات، وبعضها يقال على وجه آخر، فالمكان أيضا منه عام - وهو الذي فيه الأجسام كلها، ومنه خاص وهو أول ما فيه الشيء: وأعني بقولي هذا مثل أنك الآن في السماء لأنك في الهواء، وأنت في السماء وفي الهواء لأنك في الأرض؛ وعلى هذا المثال أنت في الأرض لأنك في مكان كذا منها، وهو الذي يحويك وحدك لا أكثر منك.

⁵⁰³ According to DC I.9 278b9-21, *ouranos* has three senses. It can mean "the substance of the outermost circumference of the universe [*tēs eschatēs tou pantos periphoras*], or the natural body which is in the outermost circumference of the universe;" it can also mean "the body which is continuous with the outermost circumference of the universe, in which the moon, the sun, and some of the stars [*astrā*] are found, for we also say that these are in the *ouranos*;" and finally, it can mean "the body which is contained by the outermost circumference, for we are used

are] in the air because [you are] on the earth, and similarly [you are] on this [sc., the earth] because [you are] in this place *which contains nothing but you*)... [my emphasis]

As Aristotle puts it in this passage, the common place (*ho topos ho koinos*) of a body is shared by other bodies, but the proper place (*ho topos ho idios*) is not. He gives an example to illustrate this distinction: someone is ultimately in a place which contains nothing but this person. This place is that person's proper place where she primarily is. But this person is also on the earth because the earth contains the proper place of this person among other things. So the earth is the common place of this person. Likewise, we can extend the list of common places with increasing order of generality: this person is in the air because it contains the earth. This person is in the heaven because it contains the air. So the air and the heaven are also common places of this person which she shares with other things, and she is in these as her common places because she is in other places contained by them, and ultimately because she is in her proper place, while she is in her proper place not because she is in some other place.

Aristotle's characterization of the way in which something is in its proper place in fact provides enough to kick off an analysis of physical circumscription that an intelligent and attentive philosopher like al-Fārābī could undertake.⁵⁰⁴ However, the Greek texts that are likely to have played a role in al-Fārābī's development of his idea of unity by virtue of circumscription go beyond Aristotle. In particular, the verb "*perigraphō*" or the noun "*perigraphē*" were employed by late antique Greek philosophers to express the idea of circumscription that al-Fārābī expresses with "*inḥiyāz*" or the related Arabic words.

We find several late antique philosophical texts which use "*perigaphein*" or "*perigraphē*" in the relevant sense of circumscription used by al-Fārābī. The first group of texts I want to review are about physical circumscription. There are several late antique philosophical works which talk about the relation between a body and its proper extremity or place, and in particular, the verb "*perigaphein*" or the related words like "*perigraphē*" are employed in many places to describe the relation between a body and its extremity or its place. And unsurprisingly, Aristotle's

to calling the whole and the universe [*to gar holon kai to pan*] *ouranos*." In the passage under consideration, *ouranos* seems to be used in the second sense, i.e., the outer part of the world from its outermost circumference down to the earth and the air around the earth.

⁵⁰⁴ Also relevant is *Met.* N.5 1092a18-9: "for the place of particular things are proper [to them] [*idios*], and for this reason they are separable by place [*dio chōrista topō(i)*]." That said, *Met.* N was not available to al-Fārābī: see Footnote n.137 in Chapter 1 Section 2 above.

discussion of place in *Physics* Book IV, especially the passages which support discussions of proper or primary place, prompt the commentators to spell out this relation.

In his commentary on the *Physics* IV.2 passage quoted above (T1), Philoponus paraphrases the contrast between the proper and the common place, but he introduces the term “*perigraphein*” apparently to highlight how a body and its proper place are related. Philoponus indicates that Aristotle talks about the proper place as opposed to the common place in T1 because “he wants to assimilate place to form by virtue of the fact that place too circumscribes and delimits each thing [*ton topon hekaston perigraphein kai periorizein*], just like the form,”⁵⁰⁵ and it is the proper place, not the common place, that resembles the form. Philoponus remarks that in this passage Aristotle contrasts “*in respect of itself* [*kath’ hauto*]” with “*in respect of another* [*kat’ allo*],” but he should instead contrast “*in respect of itself*” with “*coincidentally* [*kata sumbebēkos*],” as he does later in *Physics* IV.5. According to Philoponus, the contrary of “*in respect of another*” should be “*primarily* [*prōtōs*].” So Philoponus argues that Aristotle uses “*in respect of itself*” in T1 when he should instead use “*primarily*,” and Philoponus suggests that we should read this passage as follows: things in general are said to be *primarily* or *in respect of another*, and so are places; the proper place of X is its place *primarily* whereas the common place of X is its place *in respect of another* (518.26-519.1).

What is important for our current purpose in this passage is that Philoponus uses *perigraphein* (and *periorizein*) to express the idea that each thing is contained and separated from other bodies by its proper place.

Philoponus uses “*idia perigraphē*” to refer to the extremity of a body as it contains that body and separates it from others later in his commentary on *Physics* IV.5 in two passages: 594.31-33 and 596.21-25. These two passages are from Philoponus’ general commentary on the whole of what we call chapter 5 in the modern editions, which is followed by Philoponus’ comments on the details of the chapter.

In *Physics* IV.5, Aristotle wraps up his discussion of place. He addresses some outstanding *aporiai*, and for that purpose, he also revisits some distinctions about the different senses or

⁵⁰⁵ This sentence is translated (or paraphrased) in the version of Philoponus’ commentary in the Baghdad *Physics* as *لما أراد أن يشبه المكان بالصورة من حيث كان المكان يحصر ويحد* (p.291 lines 5-6). So we have *yaḥṣuru* (surround, contain) for *perigraphein* and *yaḥuddu* (delimit) for *periorizein*.

modes of being in a place that he touched upon before. In particular, he briefly talks about two pairs of different senses or modes of being in place: potentially (*kata dunamin - dunamei*) vs. actually (*kat' energeian – energeia(i)*), and the second pair, in respect of itself (*kath' hautō*) vs. coincidentally (*kata sumbebēkos*).

Before explaining these distinctions, let me briefly explain Aristotle's definition of place.

Aristotle defines the place of X as “the extremity [*peras*] of the containing body at which [*kath' ho*] it is in touch with the contained [body]” (IV.4 212a5-6). Aristotle reaches this definition by abduction. Through his discussion of the views held about place by earlier philosophers and the difficulties about place in the first three chapters of *Physics* IV, in chapter 4 Aristotle articulates four desiderata that the correct definition of place needs to satisfy and teases out four serious candidates to define place as. Since my concern here is not to explain fully Aristotle's account of place, I will not discuss this argument in detail, but let me sketch out its main contours. At the beginning of chapter 4, Aristotle articulates these four desiderata: “we hold [*axiōmen*] that first [1] a place contains that of which it is the place and is not a part of the thing [*mēden tou pragmatos*], also that [2] the primary [place] is neither smaller nor larger [than the thing], also that [3] it is left behind away from each thing and is separable [*apoleipesthai hekastou kai chōriston einai*], and in addition to these, that [4] everything has the up and down [*to anō kai katō*] as a place, and each body is carried by nature [towards] and rests in its appropriate [*oikeiois*] place, and it does this either upwards or downwards [*ē anō ē katō*]” (210b34-211a6). Further below, he spells out the four serious candidates to define place as: “there are, generally speaking [*schēdon*], four things one of which place must be: shape [*morphē*], matter, some extension [*diastēma*] which is between the extremities, or the extremities” (211b6-8). Aristotle argues that the first three do not satisfy some of the four desiderata, so place must be the last one, namely “the extremities,” with the specification that the place of X is the extremity of the body which contains X at which it is in touch with X entirely, as quoted at the beginning of this paragraph.

Aristotle seems to provide an alternative definition of place further below in chapter 4 at 212a20-1: he defines the place of X as “the primary unmoved [*akinēton*] extremity of what contains [X].” A closer look at this definition shows that this does not revise but only complements the previous definition. First of all, if we bracket “unmoved” for now, we get “the *primary* extremity

of the body which contains X,” and this does not add anything significant to the definition of the place of X above. According to the definition of place above, the place of X is the extremity of what contains X such that at this extremity what contains X is in touch with X. So, as implied at IV.4 211a29-34, the place of X is of the same size as the extremity of X itself because they are in touch, and as such, there is no ‘gap’ between them. In this respect, the place of X is the *primary* extremity of what contains X because, of the extremities of the things that contain X, the place of X is the smallest: the place of X is contained by any other extremity of the things that contain X, but not the other way around.

To see why Aristotle adds that the place of X is the *unmoved* extremity of what contains X, we need to see why we discuss what place is to begin with. Aristotle says in *Physics* IV.4 that we investigate what place is because we want to understand movement in respect of place (*kinēsis kata topon*) which has two kinds: locomotion (*phora*), and growth and diminution (*auxēsis kai phthisis*) (211a12-5). In particular, something can move “in respect of itself [*kath’ hauto*] and actually [*energeia(i)*],” on the one hand, or “coincidentally [*kata sumbebēkos*],” on the other; “some of the things [moved] coincidentally can be moved in respect of itself, e.g., the parts of a body and a nail in a ship...” (211a17-21). So the nail in the ship, or my hand, can move in respect of themselves when the nail is unpegged or when my hand is severed from the rest of my body, but now they locomote coincidentally because the nail is, as it were, a part of the ship, or because my hand is a part of my body; the whole ship locomotes and the nail locomotes along with it, and my hand locomotes along with my body. If we take the surface of the ship that is in touch with the nail as the place of the nail, then the nail would appear not to change its place because the surface of the ship that is in touch with the nail remains the same. This is because the nail is rigidly in touch with the ship. As I distinguished in Section 1.a above, being in touch or in contact (*haptesthai*) can mean generally being in contact, i.e., having no body between the extremities of two bodies which are said to be in contact, or it can mean more specifically being in contact *rigidly*, i.e., when one is moved in respect of place, the other is moved along with it. As quoted above, one of the desiderata for the correct definition of place according to Aristotle is that the place of X “is left behind away from [X] and is separable [from X].” When two things are rigidly in contact, like a nail in a ship or my hand with the rest of my body, they always locomote together. The nail, insofar as it is nailed in the ship, cannot locomote away from the ship but only along with it; likewise, my hand, insofar as it is my living hand and not a severed

dead hand, cannot locomote away from the rest of my body but only along with it. So, it seems that for this reason, this nail or my hand are not in place in the full sense of the word (actually and in respect of itself).

Aristotle points out at *Phys.* IV.4 211a29-31 that if a body X is not completely in touch with the surrounding body but is continuous with it, and hence a part of it, then X is not separable from the surrounding body. So, for X to be moving in respect of place actually and in respect of itself, it must not be continuous with the body which contains it. As I suggested in Section 1.a above, perhaps what I call being rigidly in contact (like the nail and a ship in which it is nailed) should be considered a kind of being continuous according to Aristotle's use of this term. If not, being not continuous with the containing body would not be sufficient for this thing to be in place actually and in respect of itself, because in that case, things which are rigidly in contact with the containing body would not be continuous with the containing body, but they would still not be in place actually and in respect of themselves (e.g., the nail in the ship).

So, it seems that at least part of the reason why Aristotle says that the place of X is the *unmoved* primary extremity of what contains X is also the reason why he demands that the correct definition of place should be consistent with claim that X can leave its place behind and is separable from it; when X and the body containing it locomote together, X does not move with respect to this containing body and hence X would not change its place if its place was the innermost extremity of the containing body at which X is rigidly in contact with or continuous with the containing body.⁵⁰⁶

⁵⁰⁶ That something should be separable from its place does not seem to be the only reason why Aristotle says that the place of X is the *unmoved* (*akinētos*) primary extremity of the surrounding body. Aristotle claims at *Phys.* IV.4 212a14-21 that "just as the vessel is a portable [*metaphorētos*] place, place is an immovable [*ametakinēton*] vessel. For this reason, when the thing inside is moved and changes in something moved, e.g., a ship in a river, what contains is taken as a vessel rather than a place. But 'place' means something unmoved [*akinētos*]. This is why the whole river is rather the place, because the whole [river] is unmoved." In other words, we want to distinguish a vessel from the place of a thing; for example, if a person on a ship is seated on the ship, when the ship moves, the person is moved along with the ship; in this respect, the person is moved coincidentally because he is seated on the ship and the ship is moved. Now, strictly speaking, this person is in place actually and in respect of himself because he is not rigidly in contact with the ship (assuming that, e.g., he is not tied to the seat and if he wants, he can walk on the ship and can leave the ship). But concerning this locomotion where the person does not move with respect to the ship but moves along with it, the ship (or more specifically, his seat in the ship) is like a vessel for the person. It seems that in Aristotle's example of a ship in a river mentioned in the passage quoted right above, we should imagine that the ship does not move against or faster than the flow of the water but along with the body of water surrounding it. In this case, the ship does not locomote with respect to the body of water surrounding it but the ship locomotes along with it like a person seated in a ship. So, the body of water surrounding the ship, in this case, would be like a vessel which carries the ship along with itself. When Aristotle adds that the place of the ship is rather the

Let me go back to explaining Aristotle's two pairs of different senses or modes of being in place: *potentially* (*kata dunamin/dunamei*) vs. *actually* (*kat' energeian/energeia(i)*) and *in respect of itself* (*kath' hauto*) vs. *coincidentally* (*kata sumbebēkos*) in *Physics* IV.5. Aristotle illustrates the first distinction, namely, the one between being in place *potentially* vs. *actually* with an example: "whenever a homeomerous thing is continuous, its parts are in place potentially; whenever [the parts] are separated [*chōrithē(i)*] but are in touch, just like a heap, [they are in place] actually" (IV.5 212b4-6). If a part is continuous with other parts, the innermost extremity of what contains it would not be the extremity of what is separate from that part; so that part would not have a place in the strong sense of the word. However, it *can* be separated from the other parts that it is continuous with, and when it *is* separated, it *is* in place in actuality. So in so far as it is capable of being in place in actuality, it is in place in potentiality.

Aristotle characterizes the second distinction, namely, the one between being in place *in respect of itself* vs. *coincidentally*, as follows: "some things are [in place] in respect of themselves; e.g., every body which is movable with respect to locomotion or increasing is somewhere in respect of itself... while other things are [in place] coincidentally, like the soul and the heaven [*ouranos*]⁵⁰⁷" (IV.5 212b7-12). So, if something is itself in place, it is said to be in place *in respect of itself*. If something is not itself in place but is said to be in place because it coincides with another thing which is in place, it is said to be in place *coincidentally*. The earth, for example, is in place, which is the innermost extremity of the water (or the air, whichever is correct according to Aristotle's view) that surrounds the earth. The earth is in a place not because it coincides with something that is in place; rather the earth itself is in place. Contrast this with my soul. My soul is not corporeal. It is not the sort of thing that can be surrounded with bodies which are in touch with it. So, my soul itself is not in place. However, it is in place

whole river because the whole river is unmoved, he seems to mean that place of the whole river (let's assume that this is the shores of the river) is unmoved and this is the place of the ship. It seems that Aristotle makes an additional point here. When something is in motion in respect of place, when we ask *where it is in the course of its motion*, we would be asking for *its place in the course of its motion*, and this would not be a place proper to it which is of the same size as this thing, but its place in the course of its motion is the place of the whole region it covers in the course of its motion. So, if we imagine a train which perfectly fits inside a tunnel, leaving no air in between, when the train starts to move at the beginning of the tunnel and stops moving at the end of the tunnel, the place of the train in the course of this motion is the inner surface of the whole tunnel, which is unmoved (so is not like a vessel for the moving train). Similarly, the place of the whole river (say, its shores) is the place of the ship and the surrounding moving body of water in Aristotle's example in the course of their motion.

⁵⁰⁷ What Aristotle means when he says that the heaven (*ouranos*) is in place not in respect of itself but only coincidentally is not directly relevant for my current purpose; so, I will not discuss this issue here.

coincidentally, because my soul ‘coincides’ with my body in a sense, as the soul of this body, and my body is something which is itself in place.

Aristotle does not explicitly talk about being in place *primarily* (*prōtōs*) or *in respect of another* (*kat’allo*) in *Physics* IV.5. As mentioned above, at the beginning of *Physics* IV.2 (T1), Aristotle seems to use “*kath’hauto*” and “*prōtōs*” interchangeably, and he contrasts “*kath’hauto*” with “*kat’allo*” in T1 instead of contrasting it with “*kata sumbebēkos*” as he does in *Physics* IV.5. In fact, at least in one other place in Book IV, Aristotle seems to be comfortable with using “*kath’hauto*” and “*prōtōs*” interchangeably on the one hand, and their contraries “*kat’allo*” and “*kata sumbebēkos*” interchangeably on the other hand.⁵⁰⁸ As I pointed out above, in his commentary on T1 Philoponus separates the “*prōtōs*” vs. “*kat’allo*” contrary pair from the “*kath’hauto*” vs. “*kata sumbebēkos*” contrary pair and adds that we should ignore Aristotle’s loose talk in T1 and take this passage to be about the “*prōtōs*” vs. “*kat’allo*” contrary pair: so something is in its proper (*idios*) place *prōtōs*, while it is in its common (*koinos*) place *kat’allo*. In line with this, in his commentary on *Physics* IV.5, after reviewing the “*kath’hauto*” vs. “*kata sumbebēkos*” contrary pair and the “*kat’energeian*” vs. “*kata dunamin*” contrary pair, Philoponus reminds that there is a third contrary pair regarding the different senses or modes of being in a place, namely, the “*prōtōs*” vs. “*kat’allo*” contrary pair.

So, Philoponus appears to impose neater distinctions on and bring greater consistency to the use of these three pairs of different senses or modes of being in a place than what is apparent from the surface of Aristotle’s text. Philoponus also tries to spell out the relations among these three pairs drawing on various claims Aristotle makes in Book IV. I am not going to detail how Philoponus tries to do that because that is not my aim here. All I want to do is to highlight the fact that in agreement with his commentary on T1 discussed above, in two passages in his

⁵⁰⁸ At *Phys.* IV.3 210a25-b22 Aristotle discusses whether something can be in itself. In this discussion, he makes a main distinction between having a predicate (including, being in something) *in respect of itself* (*kath’hauto*) vs. *in respect of another* (*kath’heteron*, *kat’allo*), and, as it seems, as a special case of the latter, *in respect of (its) parts* (*kata ta merē*). He seems to imply that *kath’hauto* and *prōtōs* mean practically the same thing in the context of this discussion in two places (at 210a33-4, it is implied that *prōtōs* is contrasted with *kata ta merē*; at 210b21-2, the conclusion of this argument is stated such that nothing is in itself *prōtōs* while from the preceding discussion, one would expect Aristotle to conclude by saying that nothing is in itself *kath’hauto*); also, at 210b18-21, Aristotle argues that something is not in itself even *kata sumbebēkos*; it is not clear to me whether this introduces a new consideration or it builds on the previous distinction between *kath’hauto* vs. *kat’allo* / *kath’heteron*; if it is the latter, then it would appear that in this context *kata sumbebēkos* and *kat’allo* / *kath’heteron* mean practically the same thing.

commentary on IV.5, Philoponus uses the Greek phrase “*idia perigraphē*” to express the extremity of a body as it contains that body and separates it from other bodies. We have a close paraphrase of the following passage in the Baghdad *Physics* version of Philoponus’ commentary⁵⁰⁹ and in it *perigraphē* is translated or paraphrased as *inhiyāz*, the very term al-Fārābī uses to express the idea of circumscription under consideration. I reproduce the paraphrase from the Baghdad *Physics* (with its English translation) below the English translation of the Greek original:

T2 Philoponus, *On Aristotle’s Physics*, 594.31-595.3, Arabic paraphrase in the ‘Baghdad Physics’ p.334 lines 23-6

τῶν γὰρ ἐν τόπῳ ὄντων, φησί, τὰ μὲν δυνάμει ἐστὶν ἐν τόπῳ, τὰ δὲ ἐνεργείᾳ, ἐνεργείᾳ μὲν ἐν τόπῳ λέγεται, ὅσα ἰδίαν ἔχοντα περιγραφὴν ἀφορίζεται ὑπὸ τοῦ τόπου τῶν λοιπῶν, δυνάμει δὲ ἐν τόπῳ λέγεται τὰ μέρη τοῦ ὅλου συνεχοῦς ὄντος καὶ ἐν τόπῳ ὄντος. κατὰ δύναμιν δὲ λέγεται ταῦτα, ὅτι δύναται χωρισθέντα τοῦ ὅλου καθ’ αὐτὰ ἐν τόπῳ εἶναι, καὶ συνεχῇ μὲν μηκέτι εἶναι, ἀπτόμενα δέ, ὥς ἔχει ὁ σωρὸς τῶν πυρῶν· ἕκαστος γὰρ τῶν κόκκων μέρος ὢν τοῦ ὅλου ἐν τόπῳ ἐστί, διὰ τὸ μὴ εἶναι συνεχεῖς, ἀλλ’ ἕκαστον ἐν ἰδίᾳ περιγραφῇ εἶναι.

For of the things in place, [Aristotle] says, some are in place potentially, while others actually: those things which, by having a proper circumscription [*idian perigraphēn*], are marked off [*aphorizetai*] from others by [their] place are said to be in place actually, while the parts of a whole which is continuous and is in place are said to be in place potentially. These are said to be [in place] potentially because they can be in place in respect of themselves [*kath’ hauta*] when they are separated from the whole, and [in this way they would] be no longer continuous, but in touch, just like how a heap of wheat grains [*purōn*] is. For although each grain [*kokkōn*] is a part of the whole, it is in place by virtue of the fact that they are not continuous but rather each one is in a proper circumscription [*en idia(i) perigraphē(i)*].

⁵⁰⁹ More on the Baghdad *Physics* and the version of Philoponus’ commentary in it, see Appendix: Availability of *Phys.* IV.

الجسم إما أن يكون في مكان بالفعل وإما بالقوة. أما بالفعل فنحو أن ينحاز بجيّن مختص به نحو هذه الجوزة، ومنه ما يكون في مكان بالقوة وهو أجزاء ما هو في مكان بالفعل فإن أجزاء الجوزة إذا افتترقت صار كل واحد منها في مكان ينحاز فيه (my emphasis).

A body is in place either actually or potentially. [It is in place] actually by way of being circumscribed by a circumscription proper to it [*yanḥāza bi-ḥayyiz mukhtaṣṣ bihi*] like this walnut [*al-jawza*]. There are also bodies which are in place potentially, and these are parts of what is in place actually; so, if the parts of the walnut become separate, each one of [its parts] come to be in a place in which it is circumscribed [*fī makān yanḥāzu fīhi*].

So, the Arabic paraphrase condenses the passage but it seems that both instances of *perigraphē* in the Greek passage are reproduced in the Arabic paraphrase using forms of *yanḥāzu*. To express the idea that the things which are in place actually “by having a proper circumscription [*idian perigraphēn*]” the Arabic paraphrase has “by way of being circumscribed by a circumscription proper to it [*yanḥāza bi-ḥayyiz mukhtaṣṣ bihi*].” We will see below in T3 that Galen’s “*idia perigraphē*” is also translated into Arabic using a very similar expression. In the Greek original, we imagine a continuous whole which is in place actually but its parts are in place potentially, but when these parts are separated, the parts themselves would also be in place actually, and then these parts would be like a heap of grains where each grain is in place actually, because each grain “is in a proper circumscription [*en idia(i) perigraphē(i)*].” In the Arabic paraphrase, we have a single example that works for both cases. A walnut (*jawza*) as a continuous whole is in place actually, and its parts are in place potentially, but when its parts are divided, then each part comes to be “in a place in which it is circumscribed [*fī makān yanḥāzu fīhi*].”

Philoponus characterizes being in place actually in a similar way a bit below: “... both the things which are in place actually (I mean those which are not continuous with others but have their proper circumscription [*idian perigraphēn*]) and the things which can locomote in respect of themselves, as he himself says (i.e., the things which themselves change their place as wholes) are in place primarily” (596.21-25).⁵¹⁰

In the three passages I reviewed from Philoponus’ commentary on Aristotle’s *Physics* IV (518.26-519.1 on the beginning of *Physics* IV.2; T2, and 596.21-25 on IV.5), Philoponus uses

⁵¹⁰ I could not find a translation or a close paraphrase of this passage in the Baghdad *Physics* version of Philoponus’ commentary, possibly because it does not add much to what Philoponus stated right above in and around T2.

“*perigraphēin*” or “*idia perigraphē*” to express the way in which the proper extremity (or the proper place) of a body contains that body and only that body, i.e., separates it from other bodies. So these Greek terms convey the idea of physical circumscription in al-Fārābī’s sense. Moreover, we saw in T2 that the version of Philoponus’ commentary in the Baghdad *Physics* has a close paraphrase of this Greek passage from Philoponus’ commentary, and the Arabic version expresses the idea expressed by “*idia perigraphē*” in the Greek with the Arabic term “*inḥiyāz*.”

I reviewed so far only a sample of passages from Philoponus’ commentary on *Physics* IV, but there are several more passages from Simplicius’ commentary on *Physics* IV and at least one passage from Alexander of Aphrodisias on *Physics* IV quoted by Simplicius which uses the Greek term in a similar sense.⁵¹¹ As can be seen in Appendix: Availability of *Phys.* IV, the Arabic translations of both Philoponus’ and Alexander’s commentaries on the part of the *Physics* IV dealing with place are attested in Ibn al-Nadīm’s *al-Fihrist*; moreover, as also detailed in Appendix: Availability of *Phys.* IV, we have a version of Philoponus’ commentary on Books III-VII (and two comments in Book VIII) (translations, summaries, close or loose paraphrases) in the Baghdad *Physics* and some fragments attributed to Alexander are also preserved in it.

I want to add, though, that by reviewing only the Philoponus passages, I am not suggesting that the use of “*perigraphēin*” (or “*perigraphē*”) in the sense of physical circumscription could be available to al-Fārābī only through Philoponus. The mentioned quote from Alexander in Simplicius’ commentary on the *Physics* could also be available to al-Fārābī. Moreover, as

⁵¹¹ This fragment attributed to Alexander is cited in Simplicius’ commentary on *Phys.* IV.2 209b6-11; this passage comes soon after T1 quoted above. Right above 209b6-11, Aristotle suggests that if the place of X is what limits and contains it, its place seems to be its form (*eidos*) or shape (*morphē*); in the passage under consideration, he suggests that if, on the other hand, the place is the extension (*diastēma*), it would be matter. Simplicius starts to discuss Alexander’s views on this passage at 538.3, but the fragment that is relevant for our purpose starts at 538.14: “having investigated what sort of form is the one that delimits [*to horizon*] matter, Alexander says, ‘Aristotle made it clear by saying ‘as by a plane and a limit’ [209b9-10]; for the form which is said as a shape is that which delimits and circumscribes [*to horizon kai perigraphon*] matter and limits it [*peratoun*]...’” (538.14-7). This passage attributed to Alexander is not in the Baghdad *Physics*. I went through the fragments attributed to Alexander in the Baghdad *Physics* as printed in Giannakis, *Fragments* and in them I have not noticed a place where Alexander expresses the idea of circumscription under consideration or a similar idea. Also, I did a TLG search with “*perigraphēin*” and the related terms in the Greek fragments of Alexander’s commentary on the *Physics* edited by Marwan Rashed (in Marwan Rashed, *Alexandre d’Aphrodise, Commentaire Perdu à La “Physique” d’Aristote (Livres IV-VIII): Les Scholies Byzantines*, ed. and trans. Marwan Rashed, *Commentaria in Aristotelem Graeca et Byzantina* 1 (Berlin: De Gruyter, 2011)); there is only one place where Alexander uses “*perigraphēin*” and this is fr. 157: “<τὸ δὲ νῦν τὸν χρόνον μετρεῖν> ἀντὶ τοῦ ὀρίζει καὶ περιγράφει τὸν χρόνον τὸ νῦν;” but here he does not express an idea directly relevant for the idea of circumscription under consideration (TLG: Maria C. Pantelia ed., *Thesaurus Linguae Graecae* ® Digital Library, <http://www.tlg.uci.edu>).

mentioned, there are other passages in Simplicius' commentary which use "*perigraphēin*" in this sense. Although I am not aware of any evidence that suggests that Simplicius' commentary on the *Physics* was translated into Arabic, it is possible that Simplicius inherits a wide range of his use of "*perigraphēin*" in the sense of physical circumscription from an earlier source, Alexander or Porphyry, without naming them. As indicated in Appendix: Availability of *Phys.* IV, Ibn al-Nadīm mentions an Arabic translation of Porphyry's commentary on *Physics* IV, which, like Alexander's commentary, is no longer extant in Greek except for some fragments. Simplicius quotes Porphyry in his commentary, although much less frequently than Alexander.⁵¹² In short, although I just presented passages from Philoponus, the use of "*perigraphēin*" to express physical circumscription could as well make its way into Arabic through other passages.

As mentioned already, in the passages from Philoponus' *Physics* commentary that are reviewed or other late antique Greek commentaries on the *Physics* that are mentioned, "*perigraphēin*" or "*perigraphē*" are used to express the idea that al-Fārābī expresses by "*inḥiyāz*" at least in the context of physical circumscription. I reviewed the direct and the indirect evidence for the availability of a part or the whole of Philoponus', Alexander's, and Porphyry's commentaries on the *Physics* in Arabic in Appendix: Availability of *Phys.* IV. I also pointed out that at least in the Arabic version of one passage from Philoponus, namely in T2, the Greek term "*idia perigraphē*" expressing the idea of physical circumscription under consideration is expressed in Arabic using "*inḥiyāz*." Of course, barring further evidence, we do not know for sure if this version of Philoponus' commentary preserved in the Baghdad *Physics* was the Arabic version of Philoponus' commentary that al-Fārābī had access to; it is possible that he had access to Qusṭā's translation of Philoponus' commentary on Books I-IV (or at least on Book IV) which was different from the version of Philoponus we find in the Baghdad *Physics*. Besides, if al-Fārābī had also access to Qusṭā's or al-Dimashqī's translations of the relevant part of Alexander's commentary on Book IV, we do not know how "*perigraphē*" or the related terms in Alexander's commentary were translated into Arabic. The same thing can be said about the Arabic translation of Porphyry's commentary on the first four books of the *Physics* recorded in the *Fihrist*.⁵¹³ So, within the confines of my survey whose results I shared above and in Appendix: Availability of

⁵¹² A TLG lemma search in Simplicius' commentary with "Ἀλέξανδρος" returned 655 hits; even if some of these are references to other Alexanders, it is likely that most of these are references to Alexander of Aphrodisias. A TLG lemma search in Simplicius' commentary with "Πορφύριος" returned only 64 hits.

⁵¹³ More on these, see Appendix: Availability of *Phys.* IV.

Phys. IV, I do not know, except for T2, which instances of “*perigraphein*” and the related words in the passages under consideration from late antique Greek commentaries on the *Physics* expressing the relevant idea of physical circumscription were translated with “*inḥiyāz*” or the related words in Arabic. To be clear, this is not a big problem because a keen philosopher like al-Fārābī could understand an idea expressed by some other Arabic word translating the Greek “*perigraphein*” or “*perigraphē*” in those passages from the Greek *Physics* commentaries and then express that idea using his own term, “*inḥiyāz*” or some other related Arabic word. Nonetheless, how “*perigraphein*” in these contexts was translated into Arabic is a relevant question for assessing the potential connections between the use of “*perigraphein*” in some Greek philosophical works and the use of “*inḥiyāz*” by al-Fārābī that we are investigating now.

Perhaps a more important thing to note is that in none of the passages from the Greek commentaries on the *Physics* quoted or mentioned above, the idea of physical circumscription is used to spell out a concept of unity, as al-Fārābī does. This shows that al-Fārābī did not simply take his senses of unity by virtue of circumscription by a place or by an extremity from the Greek passages discussed so far, but there are other interesting ways of positively engaging with a philosophical text then simply taking or adapting an idea from it. It is possible that al-Fārābī started from these passages to develop his idea of unity by virtue of physical circumscription. Alternatively, al-Fārābī could find confirmations of his idea of physical circumscription and the idea of unity based on it in these passages. The value of finding confirmations of your independently developed ideas in other credible philosophers is not just psychological; it is also epistemological. What I mean can be seen in *The Book of the Agreement between the Views of the Two Philosophers* attributed to al-Fārābī: as the author of this text, al-Fārābī or not, implies, the mere head-count of how many people agree with your view does not add to the epistemic value of your view because they might be just parroting the view of one person; however, when people *independently* exercise their critical faculties on a topic and reach the same conclusion, this agreement adds to the epistemic value of the view agreed upon, because the view withstood the independent trials of many different critical minds.⁵¹⁴

⁵¹⁴ My paraphrase from p.81-2 in Al-Fārābī, *Kitāb al-Jam‘ Bayna Ra’yay al-Ḥakīmayn* (*The Book of the Agreement Between the Views of the Two Philosophers*), ed. Albīr Naṣrī Nādir (Beirut: Dar El-Machreq Publishers, 1968) = English translation on p.127-8 in Al-Fārābī, *Alfarabi The Political Writings: “Selected Aphorisms” and Other Texts*, trans. Charles Butterworth (Ithaca, NY: Cornell University Press, 2001). As noted in Chapter 1 Section 4 Footnote n.191 above, I am not committing here to any view about the correctness of the ascription of this work to al-Fārābī.

We get even closer to al-Fārābī's account of unity by virtue of physical circumscription in Galen's *De Usu Partium*. This work by Galen was translated into Arabic in the 9th century.⁵¹⁵ The beginning of this work explicitly talks about a sense of unity by virtue of its "proper circumscription [*idia perigraphē*]," and "*perigraphē*" is translated into Arabic using "*inḥiyāz*" or related words.

T3 Galen, *De Usu Partium*, Kühn v.3, 1.1- 2.3; MS. Paris Ar. 2853 1v3-7⁵¹⁶

Ὡσπερ τῶν ζώων ἕκαστον ἐν εἶναι λέγεται τῷ φαίνεσθαι κατὰ τινα περιγραφὴν ἰδίαν μηδαμῇ τοῖς ἄλλοις ξυνημμένον, οὕτω καὶ τῶν μορίων αὐτοῦ τὸ μὲν ὀφθαλμός, τὸ δὲ ῥίς, τὸ δὲ γλῶττα, τὸ δ' ἐγκέφαλος ἐν εἶναι λέγεται τῷ φαίνεσθαι περιγραφὴν ἰδίαν ἔχον. εἰ δὲ μὴ ξυνηπτο κατὰ τι τοῖς πέλας, ἀλλὰ πάντα κεχώριστο, τότε ἂν οὐδὲ μόριον ἦν ὅλως, ἀλλ' ἀπλῶς ἐν. ὥσθ' ὅσα σώματα μήτε πάντα περιγραφὴν ἰδίαν ἔχει μήτε πάντα συνῆπται πρὸς ἕτερα, μόρια ταῦτα κέκληται.

Just as each animal is said to be one by virtue of the fact that through a proper circumscription [*kata tina perigraphēn idian*] it is clearly not joined to other things [*tois allois*] on any side [*mēdamē(i)*], so also of its parts, the eye, the nose, the tongue, or the brain [*enkephalos*], each is said to be one by virtue of the fact that each clearly has its proper circumscription [*perigraphēn idian*]. But if it were not joined to the neighboring [parts] at some point [*kata tī*], but were separate on every side [*pantē*], then it would not be a part at all, but one without qualification [*haplōs hen*]. So all the bodies that do not have their proper circumscription on every side and are not joined to others on every side are called parts.

قال جالينوس كما أن كل واحد من الحيوان يقال إنه واحد من قبل أنه يوجد منحازا بحيثز خاصي كذلك عضو الحيوان أيضا يقال إنه واحد من جهة انحياز ه عن غيره كالعين والأنف واللسان والدماغ ولو كان غير متصل بشيء مما

Even if al-Fārābī himself did not express the epistemological principle that I am spelling out here, my claim is that al-Fārābī is likely to have been sensitive to this epistemological principle.

⁵¹⁵ According to Hunayn's entry on *De Usu* (*Fī Manāfi 'al-A' dā'*) in his treatise on the translations of Galen's works, Sergius translated this work into Syriac, which Hunayn finds "bad [*radī*]," and then Hunayn himself translated it into Syriac again; then Hubaysh translated it into Arabic and Hunayn corrected this Arabic translation; at the end of the account, it is added that "after this account [*ba'da hādhā al-qawl*] Hunayn translated the seventeenth book of this work [i.e., the last book of *De Usu*] into Arabic" (Arabic text 28.4-8 in Hunayn Ibn Ishāq, *Über die syrischen und arabischen Galen-Übersetzungen*, ed. and trans. G. Bergsträsser (Leipzig: F. A. Brockhaus, 1925)).

⁵¹⁶ I want to use this as an opportunity to commend Bibliothèque nationale de France for making this ms. and many others freely available on their website.

يجاوره منفصلا عنه البتة كما أن كل واحد من الحيوان غير متصل بغيره لما كان عضوا بل كان يكون شيئا واحدا
مرسلا وإذ كان هذا هكذا فإن الأعضاء هي الأجسام التي ليست بكاملة الانحياز ولا بعضها متصل ببعض غاية
الاتصال

In this passage, Galen applies a sense of unity by virtue of having a proper circumscription (*idia perigraphē*) to animals and to their body parts (*morion*) like the eye, the nose, and so on. They all are said to be one because each one has a proper circumscription. An animal is one *without qualification* (*haplōs hen*) in this sense; although a body part is also one in this sense, it is *not* one *without qualification*. An animal is said to be one without qualification in this sense because “through a proper circumscription [*kata tina perigraphēn idian*], it is clearly not joined to other things on any side.” A body part is one but not without qualification because although it also “clearly has its proper circumscription,” it is joined to the neighboring parts “at some point [*kata ti*]” and it is not separate “on every side [*pantē*]”. That is, the body parts which are one in this sense but not without qualification “do not have their proper circumscription on every side and are not joined to others on every side.”

The idea seems to be that something has a proper circumscription *on all sides* just in case it is not joined to some neighboring bodies at any point but is completely separate from them. An animal is in this way separated from other bodies surrounding it completely through its proper circumscription. A body part, on the other hand, has its proper circumscription, but *not on all sides*: at some points it is not joined to but separated from some surrounding bodies, but at other points it is joined to and not separated from some surrounding bodies. If something has its proper circumscription on all sides, it is one *haplōs* in this sense. If, however, something has its proper circumscription, but not on all sides, it is still called one in this sense but not *haplōs*. The body parts are one in the latter sense. For example, my hand has its proper circumscription except for its part connecting to my forearm at my wrist. My hand is separated from the surrounding air through its proper circumscription, but my hand is joined to my arm at my wrist. I can imagine a surface separating my hand from my arm but this surface is not an actual extremity separating my hand from my arm. A completely severed hand, if we are permitted to call it a hand,⁵¹⁷ would have its proper circumscription on all sides, and hence, a severed hand would be one without

⁵¹⁷ That a dead, e.g., hand is not a hand, strictly speaking, but only homonymously said to be a hand because it is in the definition of a hand to perform its function as part of a certain type of living being, see *Met. Z.10* 1035b23-25; also compare *Met. Z.11* 1036b30-2.

qualification in the relevant sense. But since a severed hand is now one without qualification in the relevant sense, it is no longer a body part, according to the last sentence in T3 above. Finally, it is not explicitly put but implied that a part of a body which is completely continuous with the surrounding parts, like an inner part of a homogenous body we talked about above which is said to be in place only potentially in *Physics* IV.5, is not one at all in this sense because it does not have a proper circumscription at all since it is *not* separated from the bodies surrounding it *at any point*.⁵¹⁸

So in T3, “proper circumscription” seems to mean the extremity of a body which contains that body and separates it from other bodies. This also agrees with Galen’s use of “*perigraphē*” to refer to the extremity or the surface of a body in other places.⁵¹⁹ It is worth emphasizing that in

⁵¹⁸ There is a vagueness concern about this sense of unity and Galen does not address this concern in this passage. The vagueness at issue is about how we individuate body parts like a hand: we can relatively easily distinguish a hand from the surrounding bodies through its “proper circumscription,” i.e., through the surface of the hand which actually separates it from the surrounding bodies. Except for the wrist region, a hand is clearly separated from its surrounding. However, it gets tricky in the part of the body in which the hand joins to the forearm. How do we determine where the hand ends and the forearm begins? The question is not about finding the *exact* imagined surface which separates the hand from the forearm. I think it is natural to tolerate some vagueness in this respect, but we should still be able to identify that somewhat vague region along which the hand ends and the forearm begins. We normally place this boundary region in an approximate but clearly identifiable region of the body as we do when we show where the wrist is in a human body. The question is if the wrist is where the hand ends and the forearm begins, how do we know that the wrist is where we say it is (approximately) and that it is not separated from the forearm, e.g., along with a curve bending inside the center of the hand whose one side we normally consider to be the palm, or along with a curve bending in the opposite direction inside the forearm? It seems that the shape and the function of the hand in comparison with the shape and the function of the body part it joins to (sc. the forearm) help us determine (approximately) where the hand ends and the forearm begins. So it seems that some context sensitive structural considerations need to be supplied to determine the boundary of the body parts where these body parts join to other body parts so that we can individuate these body parts.

More generally, we can ask whether any randomly picked out chunk of human body counts as *one body part* in the relevant sense. Given Galen’s examples of the body parts which are said to be one in this sense, “the eye, the nose, the tongue, or the brain,” he seems to be interested in the organs of the body, not any chunk of the body which can be isolated in imagination or can be actually cut out from the rest of the body to the detriment of the bodily integrity of the living being at issue (in this respect, it seems apt that the Arabic translator chose to translate “*morion*” as “*uḍw*” instead of, e.g., “*juz*” which is frequently used to translate “*morion*” when it simply means a part). I do not think this vagueness concern presents a serious theoretical difficulty and Galen can certainly provide a lot of relevant context sensitive structural information for explaining how we determine the boundaries of the body parts where they join to other body parts as we normally do, or more generally, whether a given chunk of the body qualifies as *one body part* in the relevant sense, but my point is that Galen does not address this vagueness concern in this passage.

⁵¹⁹ Galen uses “*perigraphē*” in the sense of a surface or an extremity (that contains a body and separates it from other bodies) in several places, but as examples, I will mention only two passages here. First, Galen says in *On Semen* II.5 Kühn 4 638.6-8, “ὅσα τοίνυν τῶν εἰρημένων μορίων ἢ φύσις διαπλάττει τὴν ἐκτὸς ἅπασαν περιγραφὴν οἷον ἔρκος ὀχυρόν;” in Phillip De Lacy’s translation, “Therefore around all the above-mentioned parts that nature molds it first places the outer boundary as a strong barrier” (Galen, *Galen De Semine (Galen on Semen)*, ed. and trans. Phillip De Lacy (Berlin: Akademie Verlag, 1992), 193). Also, Galen says in *On the Properties of Foodstuffs* I.10, Kühn 6 504.14-16, “ἀμείνους δὲ δηλονότι καὶ τῶν ἰσχυῶν τε καὶ ῥυσῶν αἱ πλήρεις ὄλαι καὶ περιτεταμένην ἔξωθεν ἔχουσαι τὴν περιγραφὴν.” Owen Powell translates “*perigraphē*” in this sentence as “appearance:” “And it is

the *De Usu Partium* passage discussed here (T3), “*idia perigraphē*” does not merely denote the extremity of a body, but it denotes it as containing that body and separating it from the surrounding bodies. This connotation of the phrase must also be strongly felt by the Arabic translators⁵²⁰ given that the clause “*tō(i) phainesthai kata tina perigraphēn idian mēdamē(i) tois allois ksunēmnenon*” is translated as “*min qibali annahu yūjadu munhāzan bi-ḥayyizin khāṣṣiyyin*,” “*tō(i) phainesthai perigraphēn idian echon*” as “*min jihati inḥiyāzihi ‘an ghayrihi*,” and “*mēte pantē perigraphēn idian echei*” as “*laysat bi-kāmilat al-inḥiyāz*.”

It seems that al-Fārābī read Galen’s *De Usu*. Al-Fārābī has a somewhat lengthy treatise in which al-Fārābī aims to refute Galen’s objections to Aristotle on the parts of the human body.⁵²¹ I am not aware of a challenge to the attribution of this treatise to al-Fārābī.

Admittedly, the mention of the sense of unity through *inḥiyāz* in Galen’s text is far from having the philosophical depth of al-Fārābī’s account of unity by virtue of circumscription by a proper place or a proper extremity. However, it is not hard to imagine how a keen philosopher like al-Fārābī could see the philosophical significance of this idea and develop it further, or he could see the confirmation of the ideas he would have formed starting from texts like Aristotle’s *Physics* IV and perhaps also with the commentaries on it.

b. Beyond physical circumscription?

As I stated right before the ongoing review of the Greek texts that are relevant for our understanding of al-Fārābī’s ideas of circumscription, I defend two claims based on the Greek texts discussed so far and to be discussed below. The first claim is that although al-Fārābī did not simply take or adapt his ideas of the senses of unity by virtue of circumscription from any of the

clear that those that are completely full, with a tight external appearance, are better than the hard, shrivelled ones” (Galen, *On the Properties of Foodstuffs: Introduction, Translation, and Commentary*, ed. and trans. Owen Powell (Cambridge: Cambridge University Press, 2003), 49). Given that Galen compares the barleycorns which are full and have a tight external *perigraphē* with the ones which are dry and wrinkled, it would make better sense for Galen to compare the dry and wrinkled corns with the ones whose external *surface* is indeed tight, rather than making a watered-down claim about the corns whose external *appearance* is tight, as Powell’s translation has it.

⁵²⁰ See Footnote n.515 above on the Arabic translations of *De Usu*.

⁵²¹ See *Risāla li-l-Fārābī fī al-radd ‘alā Jālīnūs fī-mā nāqada fīhi Aristūṭālīs li-a ‘dā’ al-insān* (*Al-Fārābī’s Treatise on Refuting Galen on his Disagreements with Aristotle about the Parts of Humans*) in Abdel Rahman Badawi, ed., *Rasā’il Falsafīyya li-l-Kindī wa-l-Fārābī wa-bn-Bājjā wa-bn-‘Adī* (*Philosophical Treatises by al-Kindī, al-Fārābī, Ibn Bājjā, and Ibn ‘Adī*) (Benghazi: Manshūrāt al-Jāmi‘a al-Lībiyya, 1973), 38-64.

reviewed Greek texts, these texts are likely to have provided starting points or confirmations for al-Fārābī's ideas. The second claim is that in these Greek texts we find clear points of departure for al-Fārābī's articulation of his idea of unity by virtue of physical circumscription, but we do not find as a similarly clear point of departure for al-Fārābī's articulation of his idea of unity by virtue of circumscription by a quiddity. In the present subsection, the main text I will discuss is a fragment from Porphyry's long commentary on the *Categories* addressed to Gedalios (in short, *Ad Gedalium*) which survives only in fragments. In this text, Porphyry appears to take a step towards generalizing the idea of circumscription beyond the physical cases and he explicitly talks about uniqueness in close connection with unity. I will discuss this passage in detail, and I discuss the availability of Simplicius' commentary on the *Categories* and Porphyry's *Ad Gedalium* in Arabic and in particular to al-Fārābī in Appendix: Simplicius' and Porphyry's commentaries on the *Categories* below. I argue that the long Porphyry fragment discussed below and the few other texts discussed after it support both of my claims: this fragment and the other texts could serve as a starting point or a confirmation for al-Fārābī's ideas of unity by virtue of circumscription, but they do not contain as developed and similar ideas about the senses of unity by virtue of circumscription as al-Fārābī's ideas to warrant us to claim that al-Fārābī took his ideas of unity by virtue of circumscription from this fragment from Porphyry or the other texts discussed after it. The Porphyry fragment and the others also support the second claim because we saw relatively clear discussion of physical circumscription in the Greek texts discussed so far, but as I will try to show, we see merely some potent suggestions towards the generalization of the idea of circumscription beyond the physical cases in the Porphyry fragment and the other texts. These details in the Porphyry fragment and the other texts discussed in this section are valuable for our appreciation of al-Fārābī's account of the senses of unity by virtue of circumscription, but they do not provide as clear a springboard for articulating the sense of unity by virtue of circumscription by a quiddity as the Greek texts discussed so far do for articulating the sense of unity by virtue of physical circumscription.

The long Porphyry fragment that forms the main subject of this subsection is found in Simplicius' commentary on the very end of *Cat.* 6 at 154.7-155.3,⁵²² but I will focus primarily on

⁵²² With the preamble quoted below (T4), the whole fragment can be found at 154.3-155.3 = 65F in Porphyry, *Porphyrii Philosophi Fragmenta*, ed. Andrew Smith (Leipzig: Teubner, 1993).

more or less the first half of this fragment (154.7-22: T5 below).⁵²³ I said that this fragment is from Porphyry's long commentary on the *Categories* addressed to Gedalios.⁵²⁴ *Ad Gedalium* is no longer extant except for fragments mainly preserved in Simplicius' commentary on the *Categories*.⁵²⁵ Although when Simplicius quotes the fragment under consideration here, he only says that it is from Porphyry, without specifying from which work of Porphyry it is taken, we can be almost certain that it is from *Ad Gedalium*. This near certainty derives mainly from Simplicius' own account of how he composed his commentary.

At the very beginning of his *Categories* commentary, Simplicius talks about the earlier commentaries on the *Categories*, and in particular the ones that were his primary sources. To put it shortly, Simplicius mentions that Porphyry's long commentary on the *Categories* addressed to Gedalios was a comprehensive commentary on the *Categories* in seven books, which solved the *aporiai* about the *Categories* raised by earlier philosophers including Plotinus and discussed the relevant Stoic doctrines (2.5-9). *Ad Gedalium* was extensively used by Iamblichus in his own commentary on the *Categories*. As Simplicius puts it, in his commentary Iamblichus "for the most part follow[ed] Porphyry [*tois Porphuriou*] even to the extent of [using] [Porphyry's] very expressions [*kai ep' autēs tēs lexeōs*]" (2.10-1). Simplicius adds that Iamblichus elaborated on some details in Porphyry, shortened some long discussions there, and added some considerations of his own (2.11-25). Simplicius, in his turn, claims that he followed especially Iamblichus very closely: "I read [*enetuchon*] also some of the mentioned works, and following Iamblichus [*tois Iamblichou*] more carefully, as much as I could, I committed [his views] to writing [*apegripsamēn*], even using the very expressions [*autē(i)... tē(i) lexei*] of the philosopher in many places" (3.2-4). Simplicius says that he made some of Iamblichus' difficult points accessible to the wider public and shortened some of his discussions. Also, Simplicius says he

⁵²³ This text is brought to my attention by Adam Crager through Stephen Menn.

⁵²⁴ On the identity of the addressee of this commentary, see Stephen Menn, "On the Title of Porphyry's *Categories* Commentary Πρὸς Γεδάλειον," *Phronesis* 62, no. 3 (2017): 355–62.

⁵²⁵ All the fragments of and testimonies to *Ad Gedalium* recorded in Smith's edition (fragments and testimonies 45-74) are preserved in Simplicius' commentary on the *Categories*. Also, it appears that the Greek fragment of an anonymous commentary on the *Categories* found in the Archimedes palimpsest is from Porphyry's *Ad Gedalium*: Riccardo Chiaradonna et al., "A Rediscovered *Categories* Commentary," *Oxford Studies in Ancient Philosophy* 44 (2013): 129–94; in particular, for the authors' (Riccardo Chiaradonna, Marwan Rashed, and David Sedley) argument that this fragment is probably from Porphyry's *Ad Gedalium*: 129-37, for their edition of the Greek text with a facing English translation: 137-67, for their commentary on the text, 168-190, for the paleographical appendix on this text in the Archimedes Palimpsest by Natalie Tschernetska, 191-2.

Also, on the Arabic passages that are paraphrases of parts of Porphyry's short commentary on the *Categories* or his *Ad Gedalium*, see Appendix: Simplicius' and Porphyry's commentaries on the *Categories*.

added some *aporiai* or provided further articulation of some details (3.6-13). After mentioning his contributions, Simplicius does not fail to remind the reader of his debt especially to Porphyry and Iamblichus, saying, “nevertheless, I advise the prospective readers [*tois enteuxomenois*] never to look down upon [*kataphronēσαι*] especially the works of Porphyry and Iamblichus [in preference] for these explications [*epi toutois tois scholikois*], but [I advise the prospective readers] to use these as an introduction and an exercise for a more precise understanding of what those men said, if [the readers use these explications] at all” (3.13-7).

In short, according to Simplicius’ own report, Iamblichus took Porphyry’s *Ad Gedalium*, elaborated on some details, shortened some others, and added some of his own remarks; likewise, Simplicius took Iamblichus’ commentary, elaborated on some details, shortened some others, and added some of his own remarks. So according to Simplicius’ report, his commentary on the *Categories* has Iamblichus’ commentary as its substrate. Also, he used Porphyry’s *Ad Gedalium* (through Iamblichus or directly). This is also corroborated by the extensive explicit quotes from Iamblichus and Porphyry we find in Simplicius’ commentary. So unless Simplicius notes otherwise, it seems to be safe to assume that when Simplicius cites Porphyry in a direct quote or in a paraphrase in his *Categories* commentary, he refers to Porphyry’s *Ad Gedalium*.

The Porphyry fragment under consideration is in Simplicius’ commentary on *Cat.* 6a26-35 which is the closing paragraph of *Categories* 6, the chapter on quantity. In this passage, Aristotle gives his positive account of the distinguishing feature (*idion*) of *poson* (quantity or quantified thing). The *idion* of *poson* is not its essence; that is to say, it does not tell us what the *poson* really is. However, it allows us to tell whether something under consideration is a *poson* or not. Aristotle says that the distinguishing feature of *poson* is to be said to be equal or unequal. In his commentary on this passage, Simplicius raises and tries to solve a number of *aporiai* in connection with the claim that being said to be equal or unequal is the distinguishing feature of *poson*. Right before the Porphyry fragment, Simplicius discusses an *aporia* about the unit (*monas*) and the point (*stigmē*). The challenge is that being said to be equal or unequal is not the distinguishing feature of *poson*, because it does not hold of some *poson*, namely, the unit and the point. Simplicius offers two solutions to this *aporia*: the first asserts that a unit (or a point) is said to be equal to another unit (or point); the second asserts that neither the unit nor the point is *poson*.

It seems that the mention of the unit and the point prompts Simplicius to quote the passage in question from Porphyry. The whole quote from Porphyry is rather long (it covers about a full page in the CAG edition). To motivate this long quote, Simplicius says as a preamble,

T4 Simplicius, *On Aristotle's Categories* 154.3-7 (on *Cat.* 6 6a26-35)

Ἐπειδὴ δὲ ἐνταῦθα διαρθροῦν ὁ Πορφύριος ἐπιχειρεῖ τῷ Ἀνδρονίκῳ κατακολουθῶν τὴν ἔννοιαν τοῦ τε ἐνὸς καὶ τῆς μονάδος καὶ τῆς στιγμῆς, οὐ τῶν κατ' ἰδέας λεγομένων, ἀλλὰ τῶν κατ' αἴσθησιν ἢ διάνοιαν ἐναργῶν, περὶ ὧν καὶ ἡ παροῦσα πρόθεσις πραγματεύεται, φέρε καὶ ἡμεῖς τοῖς λεγομένοις παρακολουθήσωμεν.

Since Porphyry tries to articulate here, following Andronicus, the concept [*tēn ennoian*] of the one, the unit, and the point, not of those which are spoken of according to ideas [*kat' ideas*], but of those which are manifest to perception [*aisthēsin*] and discursive thought [*dianoian*], which also [our] present purpose [*prothesis*] concerns, let us attend closely to what he says: [here begins the Porphyry quote].

As I argued above, since Simplicius does not say that the following quote from Porphyry is from some other work, we should assume that it is from *Ad Gedalium*. Then it is either from that part of *Ad Gedalium* which comments on the end of *Cat.* 6, corresponding more or less to Simplicius' commentary in the surrounding passage, or the Porphyry quote is from another part of *Ad Gedalium*. It seems to be Simplicius' normal practice to cite especially Porphyry's and Iamblichus' commentary in the corresponding places in his commentary because as mentioned above, Simplicius states that Iamblichus' commentary and Porphyry's commentary are substrates of Simplicius' commentary and they are his main sources. So if this passage were from another part of *Ad Gedalium*, I would expect Simplicius to signal that in some way. So, it seems that the Porphyry quote at issue is from Porphyry's commentary on the end of *Cat.* 6, and in particular, it is prompted by Porphyry's discussion of the aporia about the unit and the point that Simplicius discusses, or it is prompted by a similar aporia involving the unit and the point that Porphyry discusses in the corresponding part of *Ad Gedalium* from which the fragment under consideration is taken.

It is stated in T4 that there are *two kinds* of the one, the unit, and the point: “those which are spoken of *kat’ ideas*,” and “those which are manifest to perception and discursive thought.”⁵²⁶

⁵²⁶ Simplicius’ claim that in the following passage quoted from Porphyry’s *Ad Gegalium* Porphyry “articulates... the concept of the one, the unit, and the point, not of those which are spoken of according to ideas [*kat’ ideas*], but of those which are manifest to perception [*aisthēsin*] and discursive thought [*dianoian*]” agrees with what appears to be Porphyry’s view in his short commentary on the *Categories* that the *Categories* does not deal with things *kat’ ideas* or more generally the intelligible things (*noētika*) but it deals only with the particulars grasped by perception and their universals grasped by *dianoia*. This view can be teased out from the discussion in Porphyry’s short commentary on the *Categories* (CAG 4.1) of why the individual substances are said to be primary while the universal substances are said to be secondary in *Cat.* 5. Let me first summarize the context. Porphyry raises an objection to calling individual substances primary substances and universals secondary substances at 90.12-26: if individual substances are called primary and universal substances are called secondary according to the following sense of priority that when an individual substance is taken away (*anaireitai*) its universal is also taken away but not the other way around, it seems that the universal should instead be called primary according to this sense of priority because if, e.g., the universal human is taken away, there cannot be any Socrates because Socrates is necessarily human, but if Socrates were not to exist, there are still other humans; so the universal human is not taken away when Socrates is taken away.

In his response, Porphyry provides two reasons in defense of Aristotle’s claim that individual substances are primary while universal substances are secondary. First, Porphyry directly addresses the objection: he argues that speaking of individual substance, Aristotle does not mean, e.g., a *definite* individual human like Socrates but *all* the individual humans: “one particular [human] [*ho heis tōn kata meros*] is not individual substance [*atomos ousia*] but all the particular humans [*hoi kath’ hekaston anthrōpoi pantes*], from whom also the human predicated in common was conceived [*ex hōn kai ho koine(i) katēgoroumenos anthrōpos epenoēthē*], and the particular animals, through which [*di’ ha*] the animal predicated in common was conceived. [The particular humans or the particular animals] are indeed the causes of being [*aitia... tou einai*] for those which are predicated in common; for beyond the particulars it is not possible to understand [*noēsai*] ox or human or horse or in general animal. If from the *aisthēsis* of the particulars and by *dianoia* we attain what is in common [*to koine(i)*], which we no longer understand as a this something [*tode ti*] but as of this sort [*toionde*], in case the particular animals are taken away, the [animal] predicated of them in common will no longer be” (90.29-91.5).

The second reason builds on the first one and provides a positive reason for why the individual substances are called primary in the *Categories*. This reason appeals in particular to the subject matter (*skopos* or in Porphyry also called *prothesis*) of the *Categories*. To put it briefly, according to Porphyry, the subject matter of the *Categories* is simple expressions which are directly significant of beings (57.20-58.20, 58.32-59.2). Porphyry continues in his response to the objection that the universal substances should instead be called primary and the individuals secondary as follows: “Also, the expressions significant of beings have been given as names for the individuals first [*eisi de kai hai sēmantikai lexeis tōn ontōn epi protera ta atoma katōnomasmenai*], and then the *dianoia* passed from these to the common things [*ta koina*]. So since the subject matter [of the *Categories*] [*prothesis*] concerns significant expressions, and the expressions were first imposed [*epetethēsan*] on the perceptible things [*aisthēta*] (for we first encounter these by perception [*kat’ aisthēsis*]), Aristotle posited these also as primary substances in accordance with the subject matter [of the work] [*kata tēn prothesin*], since just as the perceptible [substances] [*hai aisthētai*] were named [*katōnomasthēsan*] first, so he takes the individual substances to be primary in view of the significant expressions [*houtōs hōs pros tas sēmantikas lexeis prōtas titheis tas atomous ousias*]” (91.5-12).

The *Categories* studies expressions significant of beings, but such expressions are posited first to denote the particulars grasped by *aisthēsis*. After the grasping of the perceptible particulars, their universals are grasped by *dianoia*. So, the beings which are indirectly treated in the *Categories* through the expressions significant of them are, first, the perceptible particulars, and second, their universals grasped by *dianoia*. This passage does not explicitly say that the *Categories* only deals with the perceptible particulars and their universals, but given that the secondary substances are the universals of the primary substances according to Porphyry, and given that in this passage he does not call anything other than the perceptible particulars the primary substances, it seems reasonable to assume that for Porphyry the *Categories* deals *only* with the perceptible particulars and their universals. In fact, Porphyry’s response to the following difficulty in his short commentary seems to imply that the *Categories* deals *only* with the perceptibles and their universals, and *not* with intelligible things, including ideas, if there are any. Porphyry reports an objection to Aristotle’s view that the perceptible particulars are primary substances: according to

The reader is told to expect that in the following quote, Porphyry tries to explain *the second kind of the one, the unit, and the point*. Simplicius adds that his purpose in his commentary is also about these, i.e., the one, the unit, and the point according to *aisthesis* and *dianoia*, not *kat' ideas*. That a commentary on the *Categories* should concern things according to perception and discursive thought, and not *ta noēta* seems to be a common thread in the late antique Greek commentaries on the *Categories*.⁵²⁷ Strictly speaking, Simplicius' surrounding account concerns

this objection, the intelligibles (*ta noēta*) should instead be considered primary substances: “although according to him [sc. Aristotle] most strictly [*kuriōtata kata auton*] and most of all and primarily the intelligibles are said to be primary substances, e.g., the intelligible God, the intellect [*tou nou*], and the ideas [*tōn ideōn*] if there are any ideas, and even though he [sc. Aristotle] presented these [in this way], he nonetheless called the individual perceptible [substances] [*tas en tois aisthētois atomous*] primary substances” (91.14-7). In response, Porphyry appeals to his view mentioned above that the *Categories* studies the significant expressions, but the significant expressions are primarily posited for the perceptible things: “Since the subject matter [of the work] [*prothesis*] concerns significant expressions, and the expressions are primarily posited for the perceptible things (for people named [*katōnomasan*] first what they perceived [*eidon*] and sensed [*ē(i)sthonto*], and secondly the things which are prior in nature but secondary in perception [*aisthēsei*]), it makes sense that he [sc. Aristotle] posited as primary substances those which were named first by expressions (and these are perceptible and individual [*esti de ta aisthēta kai ta atoma*])). So in view of the significant expressions, the individual perceptible [substances] are primary substances, while in view of nature, the intelligible [substances] are primary. He proposes to distinguish the genera of beings according to the significant expressions, and the significant [expressions] are primarily [significant] of the perceptible individual substances” (91.19-27).

The formulation of the difficulty and Porphyry's answer to it suggest that the intelligibles here are not the universals of the perceptible particulars which are grasped by *dianoia* and which have the perceptible particulars as the causes of their being. This can be inferred based on the following observations. First, as Porphyry puts it, with respect to perception, the perceptibles are prior and the intelligibles are secondary, but with respect to nature, the intelligibles are prior and the perceptibles are secondary. Moreover, the objectors report, apparently with the agreement of Aristotle (“according to him [*kata auton*]” at 91.14), that the intelligibles are said to be primary substances in the strict sense, and Porphyry does not object to this primacy of the intelligibles in his response. So it would *not* make good sense for Porphyry to present the intelligibles as prior *in nature* and in the strict sense if he thought that the intelligibles here are the universals of the perceptibles, because the universals of the perceptibles depend on and are secondary to the perceptible particulars *in terms of their being* (i.e., in nature). So the discussion here is about whether the perceptible particulars or the intelligibles should be called the primary substances; if we prefer the first option, then the universals of the perceptible particulars come with, as it were, the perceptibles-package since the universals of the perceptible particulars latch onto the perceptible particulars in terms of their being.

In his response to the objection, Porphyry distinguishes two ways of talking about priority in this context: prior with respect to perception, or prior with respect to nature. As I just said, the perceptibles are primary and the intelligibles are secondary with respect to perception, but with respect to nature it is the other way around. Porphyry argues that since the significant expressions primarily denote the perceptibles and since the purpose of the *Categories* is to study significant expressions, from the perspective of the *Categories* the perceptibles are primary substances.

If all these observations are taken into consideration, it stands to reason that for Porphyry the *Categories* deals with the perceptible particulars and their universals, and not with the intelligibles.

For a more extensive discussion of these issues, see Simplicius' commentary on the *Categories*, 73.15-75.22, and 84.12-85.5.

Stephen Menn brought to my attention that the point and the unit according to *dianoia* as opposed to *kat' ideas* might refer to the mathematical point and unit as opposed to the intelligible point and unit, reflecting ultimately the divided line analogy in Plato's *Republic* VI. It seems to me that the view I described above that the *Categories* is about the particulars grasped by *aisthēsis* and their universals grasped by *dianoia* is compatible with this view that the understanding of the point and the unit under consideration is their understanding in mathematics.

⁵²⁷ See the previous footnote on Porphyry's view on this and the references at the end of the previous footnote to the parallel discussion in Simplicius' commentary.

the point and the unit, not also the one, but as we will see below, Porphyry's discussion of the unit rests on his discussion of the senses of the one and Simplicius anticipates this; this is not surprising because one of the main senses of the one, according to Aristotle, is the first measure of a genus, and the unit as the first measure (or the principle in the relevant sense) of numbers is the one according to this sense (see *Met.* Δ.6 1016b17-24, *Met.* Iota 1 1052b15-3b8).

As I mentioned above, the whole quote from Porphyry is rather long (it covers about a full page in the CAG edition). I decided to reproduce only the first half because the rest does not directly contribute to my general purpose here of reviewing the philosophical uses of the Greek words “*perigraphēin*” and “*perigraphē*” in al-Fārābī's sense of circumscription. Since I am not reproducing the Porphyry quote in full, let me first summarize the whole quote to provide the reader with a fuller context of what Porphyry tries to do in this passage, then I will focus on the first half of it which directly pertains to my present interest. Since I will give a detailed discussion of the first half below, let me pass over it very quickly here. Porphyry first presents his account of the one in number and the one in species/form (*tō(i) eidei*),⁵²⁸ and then he analyzes the unique (*monon*) as the combination of the one and isolation (*monōsis*), i.e., the idea of having nothing else of the same species, or genus, or in general, something closely related (*suzugon*). Finally, he states that the unit on its own (i.e., not, e.g., one of the two units that form number two, but the unit by itself as the one which is the principle of number) is isolated in that sense. This is the first half. In the second half, Porphyry talks about the point. He does so through a somewhat loose commentary on a paragraph in Aristotle's *Met.* Delta 6 (1016b24-31) without naming Aristotle. Right before this paragraph, Aristotle talks about the sense of the one *qua* the principle of number, and more generally the sense of unity *qua* the first measure of a class. Aristotle remarks that although the one differs in each class, it is undivided/indivisible (*adiaireton*) in every case. Right after this, the paragraph mentioned above comes (1016b24-31). In this paragraph, Aristotle asserts that of the things quantitatively indivisible, what is indivisible in every dimension is a unit if it does not have a position, and it is a point if it has a position. Apparently for the sake of completeness, Aristotle adds that what is divisible in one dimension (*monachē(i)*) is a line, what is divisible in two dimensions (*dichē(i)*) is a plane (*epipedon*), and what is divisible in all three dimensions (*pantē(i) kai trichē(i)*) is a solid (*sōma*). Finally,

⁵²⁸ I intentionally undertranslate *eidos* here because as will become clear below, both senses of “*eidos*” can be meant in this passage.

Aristotle counts in the reverse order starting from the solid and ending in the unit and the point. The underlying idea of this paragraph seems to be that there are three dimensions that quantitative divisibility pertains to. So assuming that n is a number between 0 and 3, if something is quantitatively divisible in n dimensions, it is quantitatively indivisible in $3-n$ dimensions. According to this schema, we can classify the solid, the plane, the line, and the unit and the point (depending on whether it has a position or not).

In the second half of the full Porphyry fragment we are discussing (i.e., 154.22-155.3), Porphyry argues for the independence of the unit and the point from each other through a loose commentary on this paragraph from *Met. Delta* 6. Considering a variation on Aristotle's claim, namely, that a unit is a point without position and a point is a unit with position, Porphyry says that this claim should not mislead us into thinking that a unit which takes on a position becomes a point and a point which loses its position becomes a unit. So they are not generated from each other: one is not the substrate of the other, nor do they have the same substrate. Finally, reminiscent of Aristotle's account of the line, the plane, and the solid, Porphyry asserts that we can grasp what the point is through an analysis of a solid or body (*sōma*): the dimension of the limit (*peras*) of something is one less than the dimension of that thing; so a body is three-dimensional, but its limit, a surface (*epiphaneia*), has two dimensions, whose limit, a line, has one dimension, and the limit of a line, a point, is dimensionless (*adiastaton*).

As I said above, the first half of the Porphyry fragment contributes directly to our discussion of the use of the Greek words “*perigraphēin*” and “*perigraphē*” to express al-Fārābī's idea of circumscription or something very similar to it. Here is the first half of the Porphyry fragment which I divided into four parts for ease of discussion:

T5 Simplicius, *On Aristotle's Categories* 154.7-22 (on *Cat.* 6 6a26-35)

[1] ὅταν γάρ, φησίν, ἐν λέγωμεν ἢ μῆκος ἢ πλάτος ἢ βάθος, σκεπτέον πῶς τὸ ἐν φαμεν. ἢ δῆλον ὡς ὁπόταν τις σῶμα θεάσῃται συνεχὲς μὲν ὅλον ἑαυτῷ περὶ πάντα τὰ μέρη, περιγεγραμμένον δὲ ἰδίᾳ καὶ τῶν ἄλλων ἀπάντων κεχωρισμένον, ἐν τὸ τοιοῦτον συνεχὲς ὀνομάζομεν καὶ τὴν τῶν μερῶν αὐτοῦ πρὸς ἄλληλα συνέχειαν ἔνωσιν. καὶ οὕτως τὸ τῷ ἀριθμῷ ἐν νοοῦμεν, [2] τὸ δὲ τῷ εἶδει ἐν καὶ ὁμοειδὲς γινώσκομεν τὰ συμβεβηκότα τοῖς ἀτόμοις κατὰ τὰς ἐνούσας διαφορὰς χωρίζοντες. [3] ὅταν δὲ μὴ μόνον ἐν, ἀλλὰ καὶ χωρὶς ἄλλου παντὸς ὁμογενοῦς ἢ ὁμοειδοῦς ἢ ὅλως συζύγου ὑπάρχει, τῆνικαῦτα μόνον

ὀνομάζομεν, σύνθετον ἤδη τι τοῦ μόνον σημαίνοντος ἕκ τε τοῦ ἐνὸς καὶ τῆς κατὰ τὸ ἀπληρημῶσθαι τῶν ἄλλων καὶ μεμονῶσθαι σχέσεως· μόνωσις γὰρ συνελθοῦσα τῷ ἐνὶ ὀνομάζεται μόνον. [4] οὐ διαφέρει δὲ μόνωσιν εἰπεῖν ἢ μονάδα· καθ' ἐνὸς γὰρ ὑποκειμένου πράγματος ἅμφω ταῦτα λέγεται· οὐκέτι μέντοι ἐπὶ τῶν δύο καὶ τριῶν καὶ τῶν ἐφεξῆς τὸ ἀνάλογον τῇ μονώσει λέγεται, διότι ἐν πλήθει ἐστὶν ἕκαστος ἀριθμός. ἔστιν οὖν σχέσις τῷ ἐνὶ κατὰ τὴν πρὸς τὰ ἄλλα πάντα ἀντίθεσιν, ὅταν ἐκείνων μονωθῇ.

[1] Whenever, [Porphyry] says, we speak of length, width, or depth as one [thing], we should investigate how ‘one’ is said. In fact (ē), it is clear that whenever someone considers a body which is a continuous whole by itself comprehending all its parts [*peri panta ta moria*], and is properly circumscribed [*idia(i) perigegrammenon*] and separated from everything else, we would call this sort of continuous thing ‘one’, and the continuity of its parts with each other ‘unity [*henōsis*]’. We understand what is one in number in this way, [2] but we recognize what is one in species/form [*tō(i) eidei*] and of the same species [*homoeides*], by separating the attributes of the individuals according to the differences present [in them] [*ta sumbebēkota tois atomois kata tas enousas diaphoras chōrizontes*]. [3] But whenever it is not only one but also exists without any other thing of the same genus or the same species or in general anything closely associated [with it] [*suzugos*], then we would call it ‘unique [*monon*],’ whereby the unique means now something composed of the one and the condition of being left alone and isolated from others [*to apērēmōsthai tōn allōn kai memonōsthai*]. For isolation [*monōsis*], when it comes together with the one, is called ‘unique’. [4] It does not make a difference whether we say ‘isolation’ or ‘unit’, for these are both said of one underlying entity. However, what is analogous to isolation is no longer said in the case of two, three, and [the numbers] after them, because each number is in a multitude. So the one has a condition of being set against everything else when it is isolated from them.

In outline, (1) is about one in number (*hen tō(i) arithmō(i)*), (2) one in species/form (*hen tō(i) eidei*), (3) unique (*monon*), and (4) unit (*monas*). (1) and (2) describe what is one in number and what is one in species/form. I discuss (1) and (2) in detail below but let me state at the outset the conclusion of that discussion that “one in number” is said of the particulars, and “one in species/form” is either said of a universal which is or has a single form, like the human species

(unlike, e.g., the accidental composite universal signified by “white human”), or it is said of multiple things which fall under the same species, e.g., Socrates and Plato are one *eidei*. For the purpose of this dissertation, the important claims in T5 are in (1) and (2); that is why I discuss them in detail below, but for the sake of completeness, let me also briefly comment on what Porphyry seems to mean in (3) and (4). In (3), the idea of the unique (*monon*) is analyzed as the combination of the one and isolation (*monōsis*): in other words, X is said to be unique (*monon*) just in case X is one and X “exists without any other thing of the same genus or the same species or in general anything closely associated [with it].” Porphyry does not specify whether the relevant sense of the one here is one in number or one in species/form. The one in number would be the primary candidate here: for example, if a species has only one particular in it, this particular would be unique because it is one in number and it “exists without any other thing of... the same species.” Some, if not all, of al-Fārābī’s examples of what is one *qua* unique in *KW* 25, as discussed above in Section 1.b, should also be acceptable as examples of the unique according to Porphyry’s characterization of the unique in T5 (3).⁵²⁹ That said, as I mentioned above and say more on it below, by the one in species/form, Porphyry might be referring to a universal which is or has a single form, like the human kind. Now it is conceivable that we can have a species which is unique in its genus. I cannot think of such an example from Aristotle or the commentators, but this is theoretically possible. If Porphyry is willing to consider such a species which is the only species that its genus has, and if he applies “the one in species/form” to species (or also to species in addition to the particulars under that species), Porphyry might mean that such a species is also unique according to the characterization of the unique in (3) because such a species is one (more specifically, one *eidei* because it is or has a single form), and it “exists without any other thing of the same genus.”

In T5 (4), Porphyry seems to identify isolation (*monōsis*) and unit (*monas*) as he says, “[i]t does not make a difference whether we say ‘isolation’ or ‘unit’, for these are both said of one underlying entity;” this claim is at first not fully clear, but Porphyry’s following remarks in T5 (4) offers a way to understand it more clearly. Porphyry says that in contrast to the unit on its own, i.e., the one as the principle of number, out of which numbers two, three and so on are composed, “what is analogous to isolation is no longer said in the case of two, three, and [the

⁵²⁹ As also quoted above, more on the problem of unique instantiation in Plotinus and Porphyry against the background of Aristotle and Alexander of Aphrodisias, see Adamson, *One of a Kind*.

numbers] after them, because each number is in a multitude;” in other words, if we consider one of the two units that form the number two, this unit is not in isolation because it does not “exists without any other thing of the same genus or the same species or in general anything closely associated [with it];” rather, in number two, this unit exists with another unit. However, when we take the unit by itself, it is in isolation, and the unit by itself is the one as the principle of number. “So [*oun*],” Porphyry concludes, “the one has a condition of being set against everything else when it is isolated from them.”

Before a detailed discussion of (1) and (2) in T5, I want to caution the reader that this passage is unlikely to present Porphyry’s full account of unity. Porphyry’s purpose in this passage is not to present his considered views on unity. I suggested above that it is likely that this passage is from Porphyry’s commentary on the end of *Cat.* 6, in particular from his commentary dealing with the aporia about the point and the unit that Simplicius discusses right before quoting this passage from Porphyry or that this passage is from Porphyry’s commentary on the end of *Cat.* 6 dealing with a similar aporia. If so, the context clearly does not demand Porphyry to present his considered view on unity. Indeed, even a cursory reading of the whole quote shows a conceptual development: the descriptions of the senses of unity contribute to our understanding of what uniqueness is, which contributes to our understanding of what the unit is; and finally, the unit is compared with the point, which is followed by a positive account of how we should understand the point. So, even if someone reads the Porphyry quote out of context, that person would realize that the end game of the whole quote is to comment on what the unit and the point are. Since Porphyry’s main aim in the passage is to discuss the unit and the point, not the senses of the one, Porphyry would not have felt that his readers would expect him to present his considered view on the senses of the one in this passage.

Moreover, when Simplicius introduces this quote from Porphyry in T4, Simplicius says that in this quote Porphyry presents an account of the one and the unit and the point not *kat’ ideas* but as they are manifest to *aisthēsis* and *dianoia*. So, in the long quote from *Ad Gidalium* of which T5 is the first half, Porphyry does not present his full account of unity because he just discusses the one as it is manifest to *aisthēsis* and *dianoia*, not the one *kat’ ideas*, as it would be fitting in a work on the *Categories*. However, even if we just focus on Porphyry’s views on the one as applying to the perceptible particulars and their universals, i.e., according to *aisthēsis* and

dianoia, we have a reason to think that Porphyry does not present his fully considered view on the senses of the one as pertaining to the perceptible particulars and their universals because as I already pointed out, the purpose of this quote is not to discuss the senses of unity but to briefly describe the main senses of unity to prepare for his discussion of the unit and the point.

With this warning being made, let me go back to my commentary on T5. For the description of what is one in number and what is one in species/form in (1) and (2), Aristotle's accounts of the senses of unity in *Met.* Delta 6 and Iota 1 are clearly in the background. Porphyry explains how "we understand [*nooumen*] what is one in number" in (1) and how "we recognize [*ginōskomen*] what is one in species/form" in (2); I think the language of "understanding" and "recognizing" is not incidental. Porphyry did not attempt to *define* what is one in number or what is one in species/form in this passage and carefully distinguish these senses of unity from other related senses of unity; rather, he describes how we can recognize things which are one in number or one in species/form in some correct way. It is in line with the overall tenor of the passage that Porphyry does not provide here a full and careful discussion of the different senses of unity. Porphyry's lack of exactness is particularly felt in his statement on what is one in number. If we assume that he is providing a definition of what is one in number, he would appear to be conflating, at least, the sense of unity *qua* continuous, the sense of unity *qua* a continuous whole, and the sense of unity in number. Although, as discussed in Chapter 2 Section 4, Aristotle's discussion of the one in number also has its own complications, Aristotle does not simply identify what is one *qua* continuous or what is one *qua* a continuous whole or what is one in number. There is an easy and natural way to save Porphyry from this embarrassment: Porphyry does not try to *define* what is one in number here: he is *describing* what is one in number, using other related ideas of unity, to help us *recognize* what is one in number. The language of "we understand what is one in number in this way" is particularly apt for this purpose. Let me note here that since Porphyry uses similar language ("understanding" and "recognizing") about what is one in number in (1) and what is one in species/form in (2), and given the overall tenor of the passage, we should not expect Porphyry to provide his fully considered account of what is one in species/form in (2) either.

In (1), Porphyry claims that "we understand what is one in number in this way:" "whenever someone considers a body which is [a] a continuous whole by itself comprehending all its parts

[*peri panta ta moria*], and [b] is properly circumscribed [*idia(i) perigegrammenon*] and separated from everything else, [c] we would call this sort of continuous thing ‘one’, and [d] the continuity of its parts with each other ‘unity [*henōsis*]’.”

To understand what is one in number, we are told in (a) that we should look at “a body which is a *continuous whole* [*suneches holon*] by itself comprehending all its parts” and in (c) it is confirmed that “we would call *this sort of continuous thing* [*to toiouton suneches*] ‘one’” (my emphases). Both in *Met.* Delta 6 and Iota 1, Aristotle distinguishes the sense of unity *qua* continuous from the sense of unity *qua* a whole. It is implied in Aristotle’s accounts of the one *qua* a whole that the latter applies to a subset of the former: of the things that are continuous, some are also wholes because each has a form, i.e., its parts are organized according to a certain structure to perform a function.⁵³⁰ As described in Chapter 2 Section 1, al-Fārābī distinguishes these two senses of unity. Although his accounts of these two senses of unity start from Aristotle’s corresponding accounts, for al-Fārābī the one *qua* a whole (*jumla*) is not a special case of the one *qua* continuous (*muttaṣil*); rather, there are also non-extended things like a syllogism that are said to be one *qua* a whole in al-Fārābī’s account,⁵³¹ but since, e.g., a syllogism is non-extended, it cannot be said to be continuous except perhaps coincidentally. Moreover, al-Fārābī puts it clearly that even the corporeal things that are said to be one *qua* a whole are not continuous, because the corporeal things which are said to be one *qua* a whole are

⁵³⁰ In *Met.* Δ.6, see 1015b36-6a17 for the account of the continuous and 1016b11-7 for the whole. It seems to be implied at the beginning of the account of the whole that it is said of what is continuous and has in addition the condition of having one form. That what is one as a whole is a special case of what is one as continuous is more clearly put in the *Met.* Iota 1 account. In fact, compared to *Met.* Δ.6, it is harder to clearly distinguish the account of the one *qua* continuous from the one *qua* a whole in Iota 1. The discussion of both can be found at 1052a19-29; this discussion starts with a general account of the continuous (1052a19-21), then it starts to discuss what is one *qua* a whole at 1052a22, and this is explicitly presented as a special case of what is continuous (see, *toiouton*, referring to being continuous at 1052a22). The rest of the discussion (1052a23-29) seems to be about ordering different cases of what is one *qua* a whole in terms of which case deserves to be called one to a greater degree than the others, but the criteria applied here are the criteria applied to the continuous for ordering which case of the continuous deserves to be called one to a greater degree than others (namely that what is continuous or what is whole by nature is one to a greater degree than what is continuous or what is a whole artificially; also what has a simple motion is one to a greater degree than what has composite motion; for the application of these criteria to the continuous, see Δ.6 1016a4-17, and Iota 1 1052a19-21).

It is worth adding that I do not suggest that in every context Aristotle applies “whole” only to a subset of continuous things (for example, Stephen Menn brought to my attention that Aristotle explicitly mentions “the parts which are not continuous [*tōn merōn tōn mē sunechōn*]” at *Phys.* I.2 185b14 and that the units in a number might be an example of this; other examples can also be produced). My whole point is that in the accounts of the one *qua* continuous and one *qua* a whole in *Met.* Δ.6 and Iota 1, the latter is presented as a special case of the former.

⁵³¹ For the initial account of non-corporeal cases of the one *qua* a whole in *KW*, see *KW* 14 = 48.8-15. For the other relevant passages about the one *qua* a whole in *KW*, see Chapter 2 Section 1.

composed of parts which are rigidly in touch with each other (like a door made by gluing pieces of wood together), and as I briefly discussed in Section 1.a above, being continuous and being rigidly in touch are mutually exclusive for al-Fārābī.⁵³²

In any case, following Aristotle, Porphyry speaks of a body which is a “continuous whole” and he says we would call “*this sort of continuous thing ‘one’*.” So if we ignore (b) and (d), we have a claim about something which is one *qua* a whole, where a whole is taken to be a specific sort of continuous body; this claim is not a very interesting claim by itself, but it is fully accurate from the Aristotelian perspective. However, in (d) Porphyry adds about what is one in this sense that we call “the continuity of its parts with each other ‘unity [*henōsis*]’.” This is not incorrect but incomplete. The *henōsis* here, i.e., that by virtue of which something is said to be one *qua* a (continuous) whole consists of two conditions about the parts of that thing: first, its parts are continuous with each other; second, its parts are organized in a way that they together manifest a form. The first condition is mentioned by Porphyry, but without the second. Given that this passage is not the place where Porphyry presents his precise view on the senses of unity, the described level of benign sloppiness is excusable. So if we bracket (b) for now, Porphyry suggests we can understand what is one in number by understanding what is one *qua* continuous, or more particularly, what is one *qua* a (continuous) whole.

As I discussed in Chapter 2, some aspects of what Aristotle means by “one in number” in the *Metaphysics* are opaque. I argued in that chapter that the direct source of al-Fārābī’s account of unity in number is Aristotle’s discussion of (the one and) the same in *Top.* I.7, but al-Fārābī uses that account in *Top.* I.7 to formulate his general idea of the one in number so that his idea of the one in number can ground all the senses of the one used in many-place contexts. So despite the differences between Aristotle’s and al-Fārābī’s ideas of the one in number, neither Aristotle nor al-Fārābī treat unity in number simply as the same as unity *qua* continuous or unity *qua* a whole. As I suggested above, despite the appearance, we should not assume that Porphyry conflates unity in number with unity *qua* a (continuous) whole. Instead, as his language also suggests, we should take him to make the point that we know that we found something that is one in number just when we perceive that it is a continuous whole. This approach seems to be motivated, in

⁵³² For the initial account of the corporeal cases of the one *qua* a whole in *KW*, see *KW* 13 = 48.1-7. For the other relevant passages about the one *qua* a whole in *KW*, see Chapter 2 Section 1.

particular, by Aristotle's recapitulation of the senses of unity at the beginning of *Met.* Iota 1. At the beginning of Iota 1, Aristotle refers explicitly back to his account of the senses of unity in *Met.* Δ.6 (1052a15-16). Apparently reviewing the account in Δ.6, he says in Iota 1 that there are four main senses of unity. The first sense is said of the continuous. The second is said of what is of this sort and is moreover a whole. The third is said of what is undivided in number (*adiaireton arithmō(i)*), which is undivided as a particular (*to kath' hekaston adiaireton*). The fourth is said of what is undivided in species or form (*adiaireton eidei*) (1052a16-35). Finally, summarizing these four, he says, following the same order, that "one" is said of the continuous, the whole, the particular (*to kath' hekaston*), and the universal (*to katholou*). So what is one in number is the particular, and what is one in *eidos* (*hen eidei*) is the universal. Aristotle talks primarily, if not exclusively, about these senses of unity insofar as they apply to substances, particular or universal (or primary or secondary, to use the terms from the *Categories*) (see 1052a33-4).⁵³³ So if we classify these four senses of unity according to their extensions, the first three senses are said of particular substances, and the fourth is said of universal substances.

There are some tensions or discrepancies between some details of Aristotle's account of the senses of unity in *Met.* Δ.6 and his account of the senses of unity in *Met.* Iota 1 (and his account of the senses of unity in *Phys.* I.2), but since this is not my main purpose here, I am not going to spell out these issues. In any case, since Porphyry's account here is not his fully considered view on the senses of unity, it is possible that he ignored those complications and took this relatively simple account of the senses of unity in Iota 1 as his template. Given that, as argued above,⁵³⁴ Porphyry seems to think that Aristotle's *Categories* addresses only the perceptible particulars and their universals, it would be apt from Porphyry's perspective that this discussion about the senses of unity provided in his *Categories* commentary is chiefly about the perceptible particulars and their universals, appropriate to the overall aim of the *Categories* according to Porphyry's own reckoning. Since the account in Iota 1 is primarily about substances, and since the perceptible substances are corporeal, it stands to reason that the passage under consideration from *Ad Gedalium* is chiefly limited to the discussion of the particular corporeal substances and their universals. A particular corporeal substance is said to be one in number. A universal substance is

⁵³³ On the primacy of substance as manifesting unity, see also *Met.* Δ.6 1016b1-3, 1016b6-9.

⁵³⁴ Namely, in Footnote n.526.

said to be one in *eidos*.⁵³⁵ What is one in number here is also said to be one *qua* a (continuous) whole and vice versa insofar as we talk about corporeal primary substances. So we can use our capacity for perceiving what is one *qua* a (continuous) whole to recognize what is one in number. In this way, it is not hard to trace a line of further simplification from the already simplified Iota 1 review of the senses of unity to Porphyry's description of the two senses of unity: one in number, and one in *eidos*.

I think this picture is basically correct. What is interesting about Porphyry's passage T5 is not its similarities to Aristotle's account of unity, but its differences from Aristotle. We find the first significant difference in (b) in (1). Let me reproduce the relevant bit of (1) for ease of reference: "whenever someone considers a body which is [a] a continuous whole by itself comprehending all its parts [*peri panta ta moria*], and [b] is properly circumscribed [*idia(i) perigegrammenon*] and separated from everything else, [c] we would call this sort of continuous thing 'one', and [d] the continuity of its parts with each other 'unity [*henōsis*]'." So a particular corporeal substance is one continuous whole, but it is also "properly circumscribed [*idia(i) perigegrammenon*] and separated [*kechōrismenon*] from everything else." Aristotle does not say anything like this *clearly* in association with any of the senses of unity he articulates.⁵³⁶ In (b), Porphyry talks unmistakably about the idea of physical circumscription discussed above. As indicated in Appendix: Availability of *Phys.* IV, an Arabic translation of Porphyry's commentary on the first four books of the *Physics* is mentioned in the *Fihrist*, and fragments from Porphyry's commentary on the *Physics* are cited by Simplicius in his *Physics* commentary. Although nothing survives of Porphyry's *Physics* commentary that explicitly talks about physical circumscription, it is not unlikely that Porphyry would have thought about physical circumscription either directly reflecting on the beginning of *Physics* IV.2 about proper place, or perhaps through Alexander's

⁵³⁵ That said, see below more on the extension of the one in *eidos* in T5.

⁵³⁶ That said, Aristotle's unclear statement in the β hyparchetype of the mss. tradition of *Met.* Iota 1 1052b15-8 (διὸ καὶ τὸ ἐνὶ εἶναι τὸ ἀδιαίρετὸν ἐστὶν εἶναι ὅπερ τόδε ὄντι καὶ ἰδίᾳ χωριστῶ ἢ τόπῳ ἢ εἶδει ἢ διανοίᾳ ἢ τῷ ὅλῳ καὶ ἀδιαίρετῳ... "this is why to be one is to be undivided, while being a this [*hoper tode*] and properly separated either in place or in *eidos* or in *dianoia*, or as something that is a whole and undivided [*tō(i) holō(i) kai adiairetō(i)*]...") (my emphasis)) might have provided a starting-point for Porphyry's idea under consideration here; this passage in this version of *Met.* Iota 1 1052b15-8 might have also had an impact in Porphyry's characterization of the one in *eidos* in T5 (2) where Porphyry says, "we recognize what is one in species/form [*tō(i) eidei*] and of the same species [*homoeides*], by separating the attributes of the individuals according to the differences present [in them] [*ta sumbebēkota tois atomois kata tas enousas diaphoras chōrizontes*]." For the reconstruction of the readings of this corrupt and difficult passage (1052b15-9) in the α and the β hyparchetypes (the latter of which I reproduced here), see Adam Crager, "Three Ones and Aristotle's Metaphysics," *Metaphysics* 1, no. 1 (2018): 110–34, 125.

commentary. Besides, recall that in his introduction of the Porphyry quote under consideration here, Simplicius says that Porphyry presents his views in this passage “following Andronicus.” So it is possible that Andronicus had something to say about the idea of circumscription, although we do not find a similar idea in any of the testimonies or fragments of Andronicus that survive.⁵³⁷ In any case, the most natural reading of (1.b) would suggest that it is about physical circumscription, independent from our assessment of how that idea made its way to Porphyry.⁵³⁸

Porphyry weaves the idea of physical circumscription with the idea of a continuous whole in (1). He does not speak of a sense of unity by virtue of physical circumscription as Galen before him does in an inchoate way and al-Fārābī after him does with rigor. Yet the idea is here in the Porphyry quote, and moreover Porphyry appears to develop the idea of circumscription beyond the physical contexts in his description of what is one in *eidos* in (2): “but we recognize what is one in species/form and of the same species [*to de tō(i) eidei hen kai homoeides*], by separating the attributes of the individuals according to the differences present [in them] [*ta sumbebēkota tois atomois kata tas enousas diaphoras chōrizontes*].”

First, we should clarify what is the underlying subject of “what is one *eidei* and *homoeides* [*to tō(i) eidei hen kai homoeides*]” i.e. what sort of entity or entities are said to be “one *eidei* and *homoeides*.” This passage is of the form “what is P and Q,” where P is the first adjective (more precisely, adjectival phrase), “one *eidei*,” and Q is the second adjective, “*homoeides*.” Let me begin with a reminder on the first adjective. The phrase “what is one in species/form [*to hen eidei*]” is used both in one-place and many-place contexts in the Aristotelian tradition. When it is used in many-place contexts, it picks out multiple things whose *eidos* is one. For example,

⁵³⁷ For the extant testimonies and fragments of Andronicus, see Michael J. Griffin’s PhD dissertation, “The Reception of Aristotle’s Categories, c. 80 BC to AD 220” (Oxford, University of Oxford, 2009), 390-409. This was brought to my attention by Stephen Menn.

⁵³⁸ Porphyry seems talk about physical circumscription in at least one other passage; I have not mentioned it above because it does not seem to have been available in Arabic. Porphyry writes in his *Letter to Anebo*, “Ἀλλὰ πῶς ἐνὸδριοί τινες λέγονται καὶ ἀέριοι, τόπους τε διειλήχασιν ἄλλοι ἄλλους, καὶ σωμάτων μοίρας διακληρώσαντο κατὰ περιγραφὴν, καίτοι δύναμιν ἄπειρον ἔχοντες καὶ ἀμέριστον καὶ ἀπερίληπτον; πῶς τε αὐτῶν ἔσται ἡ ἐνωσις πρὸς ἄλλήλους, μερῶν μερισταῖς περιγραφαῖς διειργομένων, καὶ καθ’ ἑτερότητα τῶν τόπων καὶ τῶν ὑποκειμένων σωμάτων διειλημμένων;” (2b3-8 in Porphyry, *Porfirio Lettera Ad Anebo*, ed. A. R. Sodano (Naples: L’Arte Tipografica, 1958)): English translation by Thomas Taylor: “Likewise, how some of the Gods are said to be aquatic and aerial? And how different Gods are allotted different places, and the parts of bodies according to circumscription, though they have an infinite, impartible, and incomprehensible power? How there will be a union of them with each other, if they are separated by the divisible circumscriptions of parts, and by the difference of places and subject bodies?” (p.2 in Iamblichus, *On the Mysteries*, trans. Thomas Taylor, 2nd ed. (London: Bertram Dobell, 1895)).

Socrates and Plato are one in *eidos*, because their species, humanity, is one and the same. On the other hand, when the phrase is used in a one-place context, it picks out a thing whose *eidos* is one. Although Aristotle does not use the phrase “*to hen eidei*” in the Iota 1 review of the senses of unity mentioned above, the last sense of unity there applies to universals, and a universal is said to be one in that sense because it is indivisible *eidei*, so it does not seem out of place in Iota 1 to call a universal which is one in this sense “*to hen eidei*.” The universal is said to be one in this sense because it is or has one form, not a conjunction of multiple forms. Let me adapt an example Aristotle mentions at *Met. Z.4* 1029b25-8: let’s consider the accidental composite generally signified by “white human,” and to make it more natural to appear as one thing, let’s coin a single word for it, and call it “cloak;” now the universal signified by “human” is one *eidei* because this universal is or has a single form, the form of humanity; likewise the universal signified by “whiteness” is also one *eidei* in this sense. However, what is generally signified by “cloak” is not or does not have one form: it is or has the conjunction of the form of the human and the form of whiteness. In short, speaking about substances, every universal corresponding to a natural kind would be one *eidei* in the sense described above.

That said, the difference between the one-place and the many-place uses of “one *eidei*” seems to be less important than it might initially appear. It stands to reason that the many-place use of “one *eidei*” would be analyzed as depending on the one-place use of “one *eidei*.” Plato and Socrates are said to be one *eidei* because their species, humanity, is one in the sense that this universal, humanity, is one *eidei*, i.e., this universal is or has one and the same form, not many forms.

In (2) Porphyry speaks of “what is one *eidei* and *homoeides*.” We saw that the adjectival phrase “one *eidei*” can be used in one-place or many-place contexts. So based on the first adjective, we can conclude that the whole phrase picks out either a universal which is one *eidei*, or it collectively picks out the individuals falling under that universal which are, for that reason, said to be one *eidei*.⁵³⁹

⁵³⁹ Since the definite article “*to*” of the phrase “*to de tō(i) eidei hen kai homoeides*” is in neuter singular, it might be thought that the underlying subject of the whole phrase is one entity so that “*tō(i) eidei hen*” must be used here in a one-place context. The fact that the article “*to*” is in singular does not settle the question of whether the underlying subject of “*tō(i) eidei hen kai homoeides*” is one entity (a universal) or multiple entities (many individuals under the same kind together). First of all, “*to de tō(i) eidei hen kai homoeides*” can indicate the abstract idea of what is one *eidei* and *homoeides*. Alternatively, “*to de tō(i) eidei hen kai homoeides*” can refer to one thing but with the

The “*kai*” in the phrase under consideration, “*to de tō(i) eidei hen kai homoeides*,” seems to be epexegetic. It will become clear below why I think so, but even if the “*kai*” here is not epexegetic but introducing a new condition in a conjunction, the use of “*homoeides*” should harmonize with the use of the first adjective, “*tō(i) eidei hen*,” because both adjectives modify the same implied underlying subject: in other words, if “*tō(i) eidei hen*” is used in a one-place context, so must also be “*homoeides*,” if “*tō(i) eidei hen*” is used in a many-place context, so must also be “*homoeides*.” So if we can answer whether “*homoeides*” is used in a one-place or a many-place context here, we can decide whether the whole phrase, “*to de tō(i) eidei hen kai homoeides*,” refers to some universal which is one *eidei*, or it refers collectively to some individuals which are one *eidei* (because they fall under a universal which is one *eidei* in the former sense).

The second adjective, “*homoeidēs*” is often used in many-place contexts, referring to multiple things whose *eidos* is common, i.e., things whose species is the same or things whose form is the same or like. When it is used in many-place contexts as a predicate, the locution usually is of the form “X and Y are *homoeidē*” or “X is *homoeides* Y_{dat.}” If we have a many-place use of “*homoeides*” in the phrase under discussion, i.e., “*to de tō(i) eidei hen kai homoeides*,” then the “*kai*” there must be epexegetic, with the whole phrase meaning something along the lines of “things which are one *eidei*, i.e., those whose *eidos* is one.” We observe instances of “*homoeides*” used in one-place contexts in Porphyry and other ancient Greek philosophical texts that Porphyry closely engages with, but I inspected all the instances of “*homoeides*” in Plato, Aristotle, Plotinus, and Porphyry in TLG as well as the relevant looking passages cited in the entry on “*homoeides*” in LSJ; even though in some of these passages, “*homoeides*” is used in some specific sense of uniform, in none of these passages, “*homoeides*” seems to be used in a sense that fits the context here, namely expressing the fact that a universal is or has one form and

implication that it is compared with other things and the relation indicated by the many-place use of “*tō(i) eidei hen kai homoeides*” would hold between those things: for example, consider the English sentence “X has the same species.” The predicate term “has the same species” appears to be used in a one-place context, but it is actually a truncated version of its many-place use. When we read the sentence “X has the same species,” we would normally ask “the same species as what?” and would expect that the answer be supplied by the context if the sentence is a coherent one. Another option is that “*to de tō(i) eidei hen kai homoeides*” signifies the underlying subject of “*tō(i) eidei hen kai homoeides*” generally, where the focus is not on whether the underlying subject is single or multiple. In this sense, the phrase would be signifying the underlying subject of “*tō(i) eidei hen kai homoeides*” without the specification of the number of the underlying subject. I think this last option is slightly better than the others, and this is why I translated the whole phrase as “what is one in species/form [*tō(i) eidei*] and of the same species [*homoeides*],” using “what” to reflect the ambiguity in the last option regarding the number of the underlying subject.

not a conjunction of multiple forms.⁵⁴⁰ So based on this, it seems more likely that Porphyry uses “*homoeides*” in a many-place context and that the phrase “*to de tō(i) eidei hen kai homoeides*” refers to multiple things which have the same *eidos*, e.g., Socrates and Plato together because they are one *eidei* and *homoeideis* because they both are human.

Before I move on with the interpretation of T5 (2) I want to briefly compare the account of the senses of the one we find here in T5 and Porphyry’s account of the senses of the one in his commentary on *Phys. I.2* as reported in Simplicius’ commentary. In *Phys. I.2-3*, Aristotle presents his arguments against the strong monist claim that everything is one by distinguishing different senses of being and different senses of unity. Starting at 185a20, Aristotle first presents his argument turning on distinguishing different senses of being and these are the categories. Starting at 185b5, he presents his argument turning on distinguishing different sense of unity: “the continuous is said to be one, or the undivided [*to adiaireton*], or the things whose *logos* of the essence [i.e., their definition] is one and the same, like liquor and drink [*methu kai oinos*]” (185b7-9). As I remarked in Chapter 2 Section 3, even though Aristotle does not present another and more general division of the senses of unity, major late antique commentators whose views reached us (Themistius, Philoponus, and Simplicius in their commentaries; Alexander and Porphyry as cited in Simplicius’ commentary) introduce the following general division of the senses of unity (I overlook some differences in the details): first we have unity in name (*onomati*) and unity in reality (*pragmati*). Unity in name seems to apply to things in the different categories because they cannot be under a single real kind so that they are said to be one by virtue of some name or term (*onoma*) that applies to them, but it can apply to them only non-univocally. By contrast, if things are one in reality, they can be so either in genus, or in species, or in number. All these commentators except for Porphyry also place Aristotle’s three senses of unity at 185b7-9 under the one in number. So, they posit that things can be one in number as a continuous thing, or as undivided, or as a thing which has two different names with the same meaning, like *methu* and *oinos*. As reported in Simplicius’ commentary, Porphyry disagrees with Aristotle’s use of his division of the senses of the one into the three quoted above (as continuous, as undivided, as having many names with the same meaning) in his argument that the claim “everything is one” is untenable according to each of these three senses of the one; instead, as

⁵⁴⁰ For a review of the meanings of some of these instances of “*homoeides*” used by these philosophers, see Appendix: “*homoeides*”.

quoted by Simplicius, Porphyry proposes, “the one, too, means many things, and *primarily* those things which also being [means] [*proton men hosa kai to on*], and by dividing the one into the same things as being, it is possible to tackle the issue pretty much in the same way [*paraplēsiōs estin epicheirein*], demanding how they say that being is one, whether as substance, or quality [*poion*], or as something else [*kata ti tōn allōn*]” (my emphasis) (80.25-7). The commentators agree that Aristotle here focuses on rejecting the claim that everything is one where “one” is taken to mean one in number either because the strong monist position is trivially false if “one” is taken to mean one in name or one in species or one in genus because all these senses of unity imply multiplicity of subjects, or because Aristotle already argued against these options above. So when Porphyry says here that the one is *primarily* divided into the same things as being, i.e. the categories, he should mean that the one in number is primarily divided into the categories; so, we can say that Socrates is one in number, and that the particular whiteness of this cup is one in number just as we can say that Socrates is, and that the particular whiteness of this cup is; just as “is” means existing as a substance in the case of Socrates and existing as a quality in the case of the particular whiteness of this cup, “one in number” means being one particular substance in the case of Socrates and being one particular quality in the case of the particular whiteness of this cup. That being is said in as many ways as unity is a well-known Aristotelian thesis and I say more about this in Section 3. To be clear, Porphyry does not deny here that unity *qua* continuous, unity *qua* undivided, and unity said of things with multiple names which have the same meaning are different senses of unity or different ways in which things are said to be one. However, Porphyry asserts that “primarily [*prōton*]” the one under consideration (i.e., the one in number) is divided in the same way as being (i.e., into the categories).

Since, as suggested above, in T5 we seem to focus just on particular and universal substances, we are just interested in the one said of real things (*pragmata*); so, if we look at the division of the senses of unity according to Porphyry’s commentary on *Phys.* I.2 preserved in Simplicius as filtered by restricting them to particular and universal substances which are real things, we would get the one in genus, the one in species, and the one in number, all said of substances. Since the difference between the one in genus and the one in species is a difference in degree of generality, we can just consider one in *eidos*, where *eidos* is taken in the sense of a kind, not specifically in the sense of the most specific kind. So, if we filter the account of the senses of the one in Porphyry’s commentary on *Phys.* I.2 by restricting it to universal and particular substances, this

account and the account of the senses of the one we have in T5 basically agree. In T5, we have a further description of how we can recognize each of these two senses of unity, the one in number, and the one in *eidōs*.

As for the question of whether “one in *eidōs*” in T5 is used in a one-place or a many-place context, Porphyry seems to suggest in his *Physics* commentary that “one in *eidōs*” or “one in *genos*” can be used both to apply to a kind, and to what falls under that kind. In other words, Porphyry seems to agree with what I suggested above that the human kind is one in *eidōs* and Socrates and Plato are one in *eidōs* because their kind is one in *eidōs*.⁵⁴¹

Having discussed the underlying subject of the one in *eidōs*, let me continue with the interpretation of claim (2) in the long Porphyry passage. I want to remind the reader of (2): “but we recognize [*gignōskomen*] what is one *eidei* and *homoeides*, by separating the attributes of the individuals according to the differences present [in them] [*ta sumbebēkota tois atomois kata tas enousas diaphoras chōrizontes*].” Porphyry says here that we recognize the things which are one *eidei*, i.e., of the same *eidōs* as things which are one *eidei*, and how we do that is indicated in the participial clause: “*ta sumbebēkota tois atomois kata tas enousas diaphoras chōrizontes*.” The details of this clause are rather opaque at first sight. I discuss this clause extensively below, and it will become clear that this clause can be translated more precisely into English according to the two possible interpretations of this clause spelled out below. For ease of reference, let me call this participial clause “the *chōrizein* clause.” The first thing that is worth observing is how

⁵⁴¹ As part of his commentary on *Phys.* I.2 185b25-186a3, Simplicius cites Porphyry as saying, “... then whenever they say that animal [*to zō(i)on*] is one in *genos* but many in *eidōs*, and human [*ho anthrōpos*] is one in *eidōs* but many in number, and Socrates is one in actuality but many in potentiality and in respect of parts and in respect of accidents, then wouldn’t it be the case that they call them ‘one’ in name but they in no way agree with the concept [*ennoia(i)*] of ‘one’? For the division [*merismos*] observed in these cases is great [*polus*] even though a genus or a species is said as a singular thing [*henikōs*], just as multiplicity itself and cavalry [*ho hippos*] indicates [*emphainei*] multiplicity even though each is said as a singular thing” (93.6-12) (Menn’s translation in the *Ancient Commentators on Aristotle* series brought to my attention that *ho hippos* means cavalry here; we would indeed expect Porphyry to mention a collective noun here). The context of this passage from Porphyry is not important for my purpose. I want to draw the readers attention to the fact that Porphyry first says that “animal is one in *genos*” and that “human is one in *eidōs*,” he appears to use “one in *genos*” and “one in *eidōs*” in one-place contexts here, meaning that the animal kind is one as a genus and the human kind is one as a species; but he adds that the animal kind has many species under it and that the human kind has many particulars under it, and that these are like collective nouns (or what is signified by a collective noun) in that a collective noun can be in the singular but it still refers to multiple things. Although Porphyry does not put it explicitly in this way, it is implied in this passage that when we say, e.g., the human kind is one in *eidōs*, meaning that it is one as a species, the multiple particulars under this species are also collectively one in *eidōs*. In this way, the many-place use of “one in *eidōs*” and the one-place use of “one in *eidōs*” are related.

Porphyry transitions from claim (1) into this claim (2) in the passage under consideration (T5). Recall that in (1), Porphyry talks about what is one in number, and he characterizes what is one in number as a continuous whole and something which is “properly circumscribed [*idia(i) perigegrammenon*] and separated [*kechōrismenon*] from everything else.” Given the language of “*perigraphein*” and “*chōrizein*” in (1), the “*chōrizein*” in (2) cannot be coincidental; so this is an indication of a further elaboration on the idea of circumscription or separation going from (1) to (2), with “*chōrizein*” no longer signifying physical separation or division in (2) as it does in (1).

To repeat, we recognize (*gignōskomen*) the things which are one *eidei* by dividing/separating (*chōrizein*) something in some way as expressed in what I called the *chōrizein* clause. I try to clarify what we *chōrizomen* and how we do it, and what *chōrizein* those things in that way amounts to here. Our interpretation of those details is conditioned by what the *chōrizein* clause tries to explain in claim (2). Taking inspiration from geometrical analysis, we can take a step further towards clarifying the *chōrizein* clause if we reflect on what we try to achieve by dividing/separating those things in that way so that we recognize the things which are one *eidei* as one *eidei*. Recall that such things are said to be one *eidei* because they are considered insofar as one single *eidos* belongs to them all. So, we recognize the things which are one *eidei* as such just in case we recognize somehow the one form which is belongs to them and by virtue of which they are said to be one *eidei*. So the *chōrizein* clause should describe a way to recognize such one form which belongs to the things under consideration so that we can recognize them as things which are one *eidei*.⁵⁴²

I argued above that Porphyry seems to think that the *Categories* deals with perceptible particulars and their universals and I also suggested that when Simplicius states in his introduction to the long Porphyry quote under consideration that in this quote Porphyry deals with the one, the unit, and the point according to perception and *dianoia* not according to the ideas, we should interpret this to mean that in this passage Porphyry presents an account of the

⁵⁴² Recall that I argued above that it is more likely that the underlying subject of the phrase “what is one *eidei* and *homoeides*” under consideration is a collection of things which are together one *eidei* than a universal which is one *eidei*. Even if the underlying subject is a universal, it would still hold that we recognize what is one *eidei* by *chōrizein* some things in some way because *chōrizein* those allows us to recognize the one form by virtue of which the universal is called one *eidei*. In other words, if we want, we can adapt the following interpretation of (2) in the *Ad Gedalium* passage under consideration to the other interpretation of the underlying subject of the phrase “what is one *eidei* and *homogenes*” as a universal which is one *eidei*.

one, the unit, and the point as they pertain to perceptible particulars and their universals. Also, I suggested above that Aristotle's account of the senses of unity at *Met.* Iota 1 1052a15-b1 seems to be in the direct background of Porphyry's account of the one in number and the one *eidei* in T5 (1)-(2). I also pointed out that both in this account in *Met.* Iota 1 and also in *Met.* Δ.6 Aristotle states the primacy of substances in manifesting unity. From these, I suggested that in T5 (1)-(2), Porphyry seems to be concerned chiefly, if not exclusively, with particular substances and universal substances, i.e., in the language of the *Categories*, the primary and the secondary substances. At the very least, it seems very likely that Porphyry has in mind the perceptible, i.e., corporeal particular substances in T5 (1) when he characterizes what is one in number as something which is a continuous whole. So it seems safe to assume that when he talks about what is one *eidei* in T5 (2), primarily he has in mind several perceptible substances which are one *eidei*. If Porphyry's attention is restricted also to the secondary substances in T5 (2), he would be talking about an *eidos* that is or belongs to a secondary substance as such. In other words, according to this interpretation, we want to recognize that, e.g., Socrates and Plato are one *eidei*, and the relevant *eidos* here is the *eidos* of Socrates and Plato by virtue of which they are humans. In other words, we are seeking to recognize the form of humanity which is the human species or belongs to the human species as such. Let me call this the strict interpretation of the task of the *chōrizein* clause. Alternatively, it is possible that Porphyry has in mind not only the secondary substances, but any universal, be it a substantial universal or an accidental universal. According to this latter interpretation, in order to recognize some perceptible particular substances as one *eidei*, we need to recognize some one single *eidos* that belongs to all of them, whether this form is or belongs to their species as such or not. So, for example, according to this second interpretation, we would succeed in recognizing a group of black dogs and black cats as one *eidos* if we succeed in recognizing the form of blackness that belongs to all of them.

I am not going to discuss the details of Porphyry's classification of the five types of significant universal expressions in the *Isagoge*, i.e., genus, species, differentia, proprium, and (common) accident; but assuming the reader's general familiarity with this classification, let me give examples of the strict and the looser interpretations of the task of the *chōrizein* clause using the examples from the *Isagoge*. In the *Isagoge*, the proximate genus of the human species is animal

and the constitutive differentiae of the human species are rational and mortal.⁵⁴³ So according to the strict interpretation, we achieve the task set in (2) if we recognize that the things we consider are all human, or alternatively that they all are rational mortal animals, or perhaps it is enough that we recognize that they all are rational mortal things if being rational and mortal entails in some appropriately strong sense that they are also animal, and hence that they are human.⁵⁴⁴ According to the looser interpretation, even if we consider, e.g., all the humans, perceiving a proprium of the humans, e.g., risible, is also sufficient,⁵⁴⁵ because the form of risibility belongs to all the things under consideration, i.e., all humans. Moreover, according to the *Isagoge*, blackness, for example, is an inseparable accident of the crows.⁵⁴⁶ This means that all crows are black but blackness is not a proprium for crows because there are also other black things which are not crows. So according to the looser interpretation, even if we consider all the members of a species, e.g., all the crows, perceiving their inseparable accident, i.e., blackness is sufficient for us to perceive that they are one *eidei*, because the form of blackness belongs to them all. Finally, if we do not restrict our consideration to all the members of a species, we can consider a group of black cats and black dogs, and we would succeed in recognizing that they are one *eidei*, if we succeed in perceiving that the form of blackness belongs to them all because they share a separable accident, blackness.

Before I get into the direct discussion of the *chōrizein* clause, I want to remind the reader that we should not expect Porphyry to provide a *definition* of what it takes for things to be one in *eidei* but a *description* of how we can recognize things that are one *eidei* as one *eidei*. As I suggested above, it seems that Porphyry's chief purpose in the whole fragment of which T5 is a part is not to explain what is one in number in (1) or what is one *eidei* in (2), but to talk about the unit and the point; the talk of what is one in number or what is one *eidei* is auxiliary to the talk of the unit and the point. Also, his language of “we *understand* [*nooumen*] what is one in number,” and “we *recognize* [*gignōskomen*] what is one *eidei*” are in line with the assessment that Porphyry does not seem to be primarily interested in *defining* what is one in number and what is one *eidei* in

⁵⁴³ See, for example, *Isagoge* 10.9-14.

⁵⁴⁴ I.e. if the constitutive differentiae of a species are jointly predicated of only that species (i.e., not used under a different genus) so that when we know the constitutive differentiae of a species, we would also know its genus, and hence its full definition.

⁵⁴⁵ *Isagoge*, 12.17-22.

⁵⁴⁶ *Isagoge*, 12.25-13.3.

this passage. These two reasons lend weight to the claim that Porphyry is not primarily interested in defining what is one in number and what is one *eidei* in (1) and (2) and that he might be content with only describing ways to recognize what is one in number as one in number and what is one *eidei* as one *eidei*. Furthermore, I pointed out above that if we assume that in (1) Porphyry tries to *define* what is one in number, he would be conflating related but different senses of unity. This last observation provides support to my claim that Porphyry does not seem to aim to define what is one in number in (1) but he only aims to describe ways to perceive what is one in number as one in number. Given the similarity of the language of “*noein*” about what is one in number and “*gignōskein*” about what is one *eidei*, as repeated right above, and by parity of reasoning, we should not resist the view that Porphyry’s aim in (2) is not to *define* what is one *eidei* but only to *describe a way to perceive* that the things we consider are one *eidei*.

Having clarified that our interpretation of the *chōrizein* clause must be such that in the end it fulfills the task set in (2) according to the strict interpretation of it or the looser interpretation of it as distinguished above, let me move on to the discussion of the details of the clause. Let me remind the reader of the the *chōrizein* clause: (we recognize what is one *eidei*) “by separating the attributes of the individuals according to the differences present [in them] [*ta sumbebēkota tois atomois kata tas enousas diaphoras chōrizontes*].” In the following, I present two main interpretations of this clause and it will become clear that the translation of this clause can be rendered more precisely according to these interpretations.

First of all, the prepositional phrase *kata tas enousas diaphoras* seems to be an adverbial phrase modifying the participle, *chōrizontes*, with the *kata* here indicating that according to which or on the basis of which we separate (*chōrizomen*) the *sumbebēkota* belonging to the individuals. The individuals at issue should be the individuals which are said to be one *eidei*. So we recognize a group of individual perceptible substances which are said to be one *eidei* as one *eidei* by separating the *sumbebēkota* belonging to these individuals and this separation is undertaken according to the *diaphorai* that are present in them. So, we should clarify what these *sumbebēkota* belonging to these individuals are and next we should clarify what these *diaphorai* which are present in them are. Let me begin by spelling out what “*ta sumbebēkota*” likely means in this clause.

The verb “*sumbainein*” (and its participle “*sumbebēkos*”) can be used to indicate something’s being attributed to another thing *generally, whether it is an accidental or an essential/substantial attribute*, or it can be used more specifically to indicate something’s being attributed to another thing *accidentally*. Although there are different ways of specifying the essential or substantial attributes and hence the corresponding sense of an accidental attribute, here I am interested in the substantial attributes which I identify extensionally using Porphyry’s five way division in the *Isagoge*: the substantial attributes of X are the species of X, the genus of X, and any differentia of X and only these. Every other attribute is to be taken as an accidental attribute in this context. These substantial attributes are either the lowest kind of X (sc. its species) or the constitutive parts of its definition (sc. its genus and differentiae). We can find reasons both in the *Isagoge* itself and more explicitly in the late antique Greek commentaries on the *Isagoge* for calling the genus, the species, and the differentia (according to their primary senses) substantial, and by contrast, calling the proprium and the (common) accident (according to their primary senses) accidental, but spelling out these reasons is not my concern here.

Aristotle often uses “*sumbebēkos*” in the sense of accident as opposed to essential or substantial attributes, but this is by no means universal. Even if we put aside the numerous passages where Aristotle explicitly talks about “*kath’ hauto sumbebēkos*” (see Index Aristotelicus 713b43-57) or uses similar expressions (Index Aristotelicus 713b57-714a3), we observe the occasional use of “*sumbainein*” by itself in the general sense of attribution in Aristotle, including the substantial attributes in the sense stated above; for example, at *Met.* A.1 981a18-20 Aristotle says, “... someone who is practicing medicine [*ho iatreuōn*] does not heal a human being except coincidentally [*kata sumbebēkos*], but [he heals] Callias or Socrates or someone else who is spoken of [*legomenōn*] in this way [i.e., as a particular], who happens to be human [*hō(i) sumbebēke anthrōpō(i) einai*].” Aristotle uses “*sumbainein*” at the end instead of “*huparchein*,” talking about the attribution of human to Callias presumably because the focus of the passage is on the fact that the proper description of someone as the receiving end of medical treatment is “patient,” but of course a patient in this case is also a human being (for a similar point, see *Met.* Delta 2 1013b34-1014a3 = *Phys.* II.3 195a32-b1). That said, this passage still shows that the attribution of the species of an individual to that individual can be expressed using the verb “*sumbainein*.” In addition to this passage in *Met.* A.1, Aristotle can be taken to use “*sumbebēkos*” to mean any attribute, including the substantial attributes in the sense I am interested in here, in

APo I.4. It is possible to read the third senses of *kath'hautō* in *APo* I.4 as applying only to the primary substances so that everything else would be *sumbebēkos* in the corresponding sense. As Aristotle puts it, “*kath'hautō*” is said with respect to “also what is not said of some other thing as of a subject. For example, the walking thing [*to badizon*] is a walking thing [*badizon*] by being something else [*heteron ti on*]; also the white [*is like this*]. But substance and whatever signifies a this something [*tode ti*] is what it is, not by being something else [*ouch heteron ti onta estin hoper esti*]. I call the things which are not [said] of a subject *kath'hautō*, and those which are [said] of a subject *sumbebēkota*” (73b5-10). Since the genus, the species, and the differentiae of, e.g., Socrates are said of Socrates, it seems that his genus, species, and differentiae would be *sumbebēkota* according to this characterization.^{547 548}

In short, there is no *prima facie* reason that “*sumbebēkos*” in the *chōrizein* clause does not mean attribute in general, including the substantial attributes as described above. However, it is likely that Porphyry uses “*sumbebēkos*” in the *chōrizein* clause to mean an accidental attribute. This is based on my inspection of the uses of “*sumbainein*” including its participial forms in the extant fragments of *Ad Gedalium* and two of Porphyry’s works that are most closely related to *Ad Gedalium*: the *Isagoge* and his short commentary on the *Categories*. My inspection of the uses of “*sumbainein*” with its participial forms in these works by Porphyry led me to the observation that Porphyry almost never uses “*sumbainein*,” and especially “*sumbebēkos*” in a technical sense, to indicate an attribute generally speaking, including substantial attributes. In any case, I interpret the *chōrizein* clause below both according to the general sense of “*sumbebēkos*” meaning an

⁵⁴⁷ Themistius appears to follow this natural reading of the passage in his paraphrase of the *Posterior Analytics* when he says that things which are said to be *kath'hautō* are “the individuals of substance; so Callias is said to be this [i.e., *kath'hautō*] in this way [*hōde oun houtōs ho Kallias legetai*]” (11.11-2). However, Philoponus clearly feels unease about the implication that the secondary substances would be called *sumbebēkota* according to the this reading of the passage and offers a gloss in his commentary on this third sense of *kath'hautō* in *APo* I.4; using the “said of a subject” and “said in a subject” distinction in the *Categories*, he glosses Aristotle’s expression “[what is said] of a subject” as “[what is] *in a subject*” so that secondary substances would not be considered *sumbebēkota* because even though they are said of subjects, they are not present in subjects: “also what is not said of some other thing as of a subject, i.e., what is not in something else as in a subject, [*toutestin ho mē en hupokeimenō(i) allō(i) tini estin*] just as walking [*to badizein*] is... some things are indeed not [said] of a subject, i.e., not in a subject [*toutesti mē en hupokeimenō(i)*]; for instead of ‘in a subject’, he employed [the expression] ‘of a subject’” (63.29-64.2). In his discussion of the senses of *kath'hautō* = *bi-dhātihi* in *KH*, corresponding to this third sense of *kath'hautō* in *APo* I.4, al-Fārābī includes both primary and secondary substances under this sense of *kath'hautō* (*KH* 76). In a future publication, I intend to discuss al-Fārābī’s accounts of the senses of *per se* (*bi-dhātihi*) (and *per accidens* (*bi-l-‘araḍ*) as opposed to it) in various works by him and al-Fārābī’s potential sources in the Greek commentators.

⁵⁴⁸ As Castelli notes in n.55 on *Problems and Paradigms of Unity*, 35, in *Top.* II *sumbebēkos* is used to indicate the general sense of attribution (like *huparchein*) and not specifically to indicate *accidental* attribution.

attribute, substantial or accidental, and according to the special sense of “*sumbebēkos*” meaning an accidental attribute.

In order to clarify what *diaphora* could mean in the *chōrizein* clause under consideration, it is useful to look at Porphyry’s account of the three kinds of *diaphora* in the *Isagoge*. In fact, Porphyry presents two different characterizations of three kinds of *diaphora* in the *Isagoge*, but it seems that he means both characterizations to correspond to each other, at least in part. He first distinguishes the common (*koinōs*), the proper (*idiōs*), and the most proper (*idiaitata*) differences (*diaphora*). One thing is said to differ commonly if it differs “from itself or from something else [*pros hauto ē pros allo*]” “by whatever otherness there is [*heterotēti... hopōsoun*].” As an example, Porphyry mentions without specifying that Plato differs from Socrates and that Socrates at an earlier time differs from Socrates at a later time in respect of an accident he had earlier but does not have later (8.8-12). It seems from the description of the common difference that it is the most general sense of difference and the other kinds of difference will fall under this, but it appears from Porphyry’s examples that he thinks in particular of differences between individual substances, especially those under the same species like Plato and Socrates; moreover, in the case of the same thing different from itself, his example suggests that he thinks of the way in which one individual substance differs from itself in time *by a separable accident* because this individual substance has this accident at time t1 but does not have it at time t2. I will come back to this point below.

Proper difference is characterized as difference by “an inseparable accident [*achōristō(i) sumbebēkoti*].” As quoted above, in the account of the (common) accident in the *Isagoge*, Porphyry mentions the blackness of the crows as their inseparable accident. Here, he gives examples that seem to belong not to an identifiable group like the species of crows but to particular individuals throughout their lives (or the rest of their lives). As examples of proper difference, Porphyry mentions “the blueness (of the eye) [*glaukotēs*], the hookedness of the nose [*grupotēs*], and a permanent scar from a wound [*oulē ek traumatos enskirōtheisa*]” (8.12-5). Perhaps Porphyry means that the common difference has the proper difference as its proper subset, in the sense that every proper difference is a common difference but there are some common differences which are not proper differences, but in that case, it seems that his examples

of the common difference described above are examples of those common differences which are not proper differences, i.e., difference by separable accidents.

The most proper difference is characterized as the “species-producing [*eidopoiō(i)*] difference,” i.e., differentia, as Porphyry’s example makes it clear: “just as human differs from horse by [its] species-producing difference, i.e., the quality of rationality” (8.15-7).

As I pointed out above, “*sumbebēkos*,” which I translated as “accident” in my discussion of the *Isagoge* passages above, can mean an attribute in general, or it can mean an accidental attribute (i.e., a non-essential or a non-substantial attribute) in particular. If Porphyry uses “*sumbebēkos*” in this context to mean an accidental attribute in particular, since the differentia is an essential or a substantial attribute, a differentia would not be a special sort of inseparable accident (*achōriston sumbebēkos*), and hence, the most proper differences would not be proper differences. However, if “*sumbebēkos*” here means attribute in general (accidental or otherwise), differentia can be considered an inseparable attribute. In that case the most proper differences, i.e., the differentiae, would be proper differences, i.e., inseparable attributes. That said, no use of “*sumbebēkos*” in the *Isagoge* clearly suggests that by this use of the term Porphyry means an attribute in general and that is why I translated “*sumbebēkos*” as “accident” above.

So, it is possible that the adjectives “common” “proper” and “the most proper” put before “difference” to label these three kinds of differences are not meant to indicate a relation of strict containment, i.e., any most proper difference is also a proper difference, which is also a common difference but not the other way around; but rather, according to this interpretation, these three labels mark the three partitions of differences: i.e., the common differences are differences by separable accidents, the proper differences are differences by inseparable accidents, and the most proper differences are the differentiae, i.e., differences by essential or substantial attributes.

If Porphyry meant strict containment relations among the common, proper, and the most proper differences, we must take his examples of common differences to be meant to illustrate the common differences which are not proper differences, and likewise, we must take his examples of the proper differences to be meant to illustrate the proper differences which are not the most proper differences. Moreover, if Porphyry meant strict containment relations among them, when he characterizes proper differences as differences by inseparable *sumbebēkos*, “*sumbebēkos*”

here must mean attribute in general, not specifically an accidental (i.e., non-essential or non-substantial) attribute.

After this, at 8.17-9.2, Porphyry remarks that when the common and the proper difference are added to something, they make it “something of a different quality [*alloion*]” while when the species-producing difference, i.e., differentia is added to something, it makes it “another thing [*allo*];” as examples, Porphyry mentions that “if the difference added to animal is the [difference] of rational, it makes [animal] another thing, but if it is the [difference] of moving, it makes it only something of a different quality [*alloion*] in comparison with what is at rest” (8.21-9.2). The difference between making something *allo* and making it *alloion* seems to indicate that the most proper difference, i.e., differentia is a substantial attribute so that things which differ in terms of their differentia are different kinds of substances, while the common and the proper differences (or perhaps we should say, those common and proper differences which are not the most proper differences, if there are strict containment relations between them) are accidental attributes so that things which differ in terms of their common or proper differences are not of different kinds but of different qualities (whether the difference is of separable or inseparable accident). This idea seems to be confirmed in the second characterization of three kinds of differences that Porphyry starts to present at 9.7 in the *Isagoge*. Signaling the beginning of this second characterization with the statement “starting from the beginning again [*anōthen oun palin archomenō(i)*]...” Porphyry goes on to obtain the three kinds of differences by first dividing the differences into the separable (*chōristē*) and the inseparable (*achōristos*) differences. He then divides the inseparable differences into the *per se* (*kath' hautēn*) and the accidental (*kata sumbebēkos*) differences. The most proper differences, according to the first characterization, i.e., the differentia, are inseparable and *per se* differences; these are said to be *per se* differences because “they are taken in the account of the substance [of the subject] [*en tō(i) tēs ousias lambanontai logo(i)*]” whereas the accidental differences are “not taken in the account of the substance [of the subject]” (9.7-16). The accidental differences according to this second characterization correspond to the common and the proper differences according to the first characterization (or the accidental differences according to the second characterization correspond to those common and proper differences which are not the most proper differences, if we have strict containment relations between the common, the proper, and the most proper differences according to the first characterization) because Porphyry says at 9.14-6 that the *per se*

differences produce another thing (*allo*) while the accidental differences produce something of a different quality (*alloion*).

In short, we have two main kinds of differences that are relevant for our purpose of getting clearer on the *chōrizein* clause: some differences are *per se*, i.e., the differentia, while other differences are accidental, whether they are separable or inseparable. Before I move onto my interpretation of the *chōrizein* clause, let me say a bit more to explain the distinction between *per se* and accidental attributes and in particular, the *diaphorai*.

The most proper differences, i.e., the differentiae are called divisive (*diairetikē*) with respect to the genus; the same differentiae are called constitutive (*sustatikē*) with respect to the species. For example, rational is a divisive differentia of the genus animal, and it is a constitutive differentia of the species human. Porphyry adds that these differences, i.e., the differentia, are called “species-producing [*eidopoioi*]” for constituting a species, and “most of all, these [*diaphorai*] have a use for the divisions of the genera and the definitions, but not the [*diaphorai*] which are *kata sumbebēkos* and inseparable, let alone the separable ones” (10.18-21). Talking about *diaphorai* in the sense of differentia below, Porphyry says that *diaphora* does not only separate things under the same genus, but it also “contributes to the being [*to einai*] [of the subject] and [it] is a part of the essence [*to ti ēn einai*] of the thing [sc. the subject].” To illustrate this, Porphyry mentions that being naturally disposed to sail (*pephukenai plein*) is a proprium of humans and it separates humans from other animals, but it is not a differentia of humans because it is not “completive [*sumplērōtikon*] of the substance [of humans] nor is it a part of [their substance].” Being naturally disposed to sail is not an *eidopoios diaphora* because such *diaphorai* are not “taken up in [*paralambanontai*] in the essence” (12.1-10).

It seems that being taken in the *logos* of the substance of the subject, or contributing to *to einai* of it and being a part of its essence, or being completive of its substance and being a part of its substance, or being taken up in its essence are all virtually equivalent characterizations of the *kath' hauto* predication under consideration. Accordingly, the *kata sumbebēkos* predication is to be understood as any predication which is not *kath' hauto* predication. Species and genus would be *kath' hauto* predicated of their subjects because they are predicated of their subjects in respect of what their subjects are (*ti esti*). As already discussed, the strict sense of differentia is also *kath' hauto* predicated. It is also implied that proprium is not predicated in this way: being naturally

disposed to sail is an “*idion* of humans” but it is not “completive [*sumplērōtikon*]⁵⁴⁹ of the substance [of humans] nor is it a part of [their substance]” (12.4-7). It seems that the common accident, whether separable or inseparable, is also not *kath’ hauto* predicated of its subjects. I am moving a bit too quickly here skipping over some details, but as I stated above, for the purpose of my discussion of the *chōrizein* clause, all I need is the distinction between *per se* and accidental differences while a *per se* difference is the one which completes or constitutes the essence or the substance of something and an accidental difference is any other difference. When Porphyry talks about *per se* differences, he has in mind the differentiae. Although he seems to think primarily of the separable and the inseparable (common) accidents as the accidental differences, his example of the proprium of the humans mentioned above (i.e., all and only the humans are naturally disposed to sail) suggests that he would also consider the propria among the inseparable accidental differences.

In order to interpret the *chōrizein* clause directly, we need one last piece of preliminary observation. I translated *chōrizein* as separating but as the English word is also ambiguous, it can mean setting something apart (from others) (*in re* or in thought), or it can mean dividing a group of things into two groups (*in re* or in thought).⁵⁵⁰

Now we can assemble all these and interpret the *chōrizein* clause. Recall that it is implied in T5 (2) that we recognize the perceptible individual substances which are one *eidei* as such by separating the *sumbebēkota* belonging to these individual substances according to the *diaphorai* present in them. For example, let’s assume that both Plato and Socrates are musical. We want to recognize that they are one *eidei* because the form of humanity belongs to both or because the form of musicality belongs to both. In other words, we want to recognize their species

⁵⁴⁹ I should underline that when I translate “*sumplērōtikon*” as “completive,” I do not suggest that what is *sumplērōtikon* is the last element added to finish off the constitution of something. By “*sumplērōtikon*,” I simply mean “constitutive” but since I used “constitutive” to translate “*sustatikon*” in the *Isagoge*, following other scholars, I decided to translate “*sumplērōtikon*” as “completive.”

⁵⁵⁰ As indicated in the LSJ entry on “*chōrizō*,” as an example of the use of the verb in the sense of dividing, consider Xenophon’s *Economics* 9.8 where he says “we divided all the movable property by tribes [*echōrisamen panta kata phulās ta epipla*].” In a similar sense, Aristotle writes at *Pol.* II.5 1264a6-8 that “no one will be able to create a city-state unless he parts [*merizōn*] and divides [*chōrizōn*] them [*auta*, sc. (following the translation in *Complete Works of Aristotle*) the constituents of the city], in part, into common meals [*eis sussitia*], and in part into tribes and subdivisions of tribes [*eis phratias kai phulas*].” (For the use of “*chōrizein*” in the sense of “*merizein*” Index Aristotelicus (860b10-1) mentions two other passages: *EN* 1121b19, *GA* 723b14). Of the use of the verb in the sense of setting apart, examples are too many. Mentioning just one should suffice: in Plato’s *Phaedo* 67c, Socrates reminds Simmias of their earlier assertion that the purification (*katharsis*) of the soul is “to separate the soul [*chōrizein* ... *tēn psuchēn*] from the body as much as possible...”

(equivalently their genus plus constitutive differentiae, or perhaps their constitutive differentiae are equivalent to their species in a strong enough sense), or we want to recognize some accidental attribute they share. If it is their species that we want to recognize, i.e., according to the strict interpretation of the task of the *chōrizein* clause as I called it above, as a result of separating their *sumbebēkota* according to the *diaphorai* present in them, we should be able to recognize their species. If *sumbebēkota* means attribute in general, this would amount to dividing all the attributes of these individuals into two groups, and in the target group, we would end up with only the species, or equivalently the constitutive differentiae and the genus (and perhaps only the constitutive differentiae are also enough for this purpose). It seems that according to this understanding of the *chōrizein* clause, the *diaphorai* present in these individuals should be understood as the *diaphorai* they share. In other words, when we consider Plato and Aristotle and we want to isolate their shared species (or constitutive differentiae, say mortal and rational) among all their attributes, we separate their attributes according to their shared constitutive differentiae, i.e., mortal and rational. Assuming that the constitutive differentia are equivalent to the species in the relevant way, of all the attributes of Plato and Socrates, we leave out all except for their constitutive differentiae or what is equivalent to their constitutive differentia in the relevant way. If *sumbebēkota* means accidental attributes specifically, again we take the constitutive differentiae of Socrates and Plato as our measure, and we leave out all the attributes that are not equivalent to or implied by these differentia in the relevant way, i.e., all the attributes which are not species, genus, or differentiae of Socrates and Plato, i.e., all the accidental attributes of Socrates and Plato. Also in this case, we draw a boundary among the attributes of Socrates and Plato guided by the constitutive differentiae of them.

If we want to recognize some attribute Socrates and Plato have (be it accidental or otherwise), i.e., according to the loose interpretation of the task of the *chōrizein* clause as I called it above, *sumbebēkota* can mean attribute in general or accidental attributes in particular. The important difference is that in this case the *diaphorai* present in Socrates and Plato would mean something different. The *diaphorai* present in Socrates in Plato are the differences *between* them, i.e., an attribute Socrates has but Plato does not have, or the other way around. Since Socrates and Plato belong to the same species, these differences would be separable or inseparable accidents that one has but the other does not have. If we consider, e.g., a black dog and a black horse, these differences between them would include their differentia as well as their propria. In any case, we

sift through the attributes of, e.g., Socrates and Plato according to the differences *between* them, i.e., we separate all the attributes that constitute a difference between them and we end up with only those attributes that are not like this, i.e., the attributes shared by them. This completes our task of finding some attributes that are shared by both Socrates and Plato.

So, according to the two interpretations of the *chōrizein* clause, we recognize the *eidos* that is common to the things which are one *eidei* by separating attributes or accidents according to the accidental differences among these things or according to the essential difference, i.e., the differentia, shared by these things. That the differentia is used to identify the species is also found in Aristotle's *Topics* but the idea here seems to be that we use the differentia to distinguish a species from the other species under the same genus:

T6 *Top.* I.18 108a38-b6

Τὸ δὲ τὰς διαφορὰς εὑρεῖν χρήσιμον πρὸς τε τοὺς συλλογισμοὺς τοὺς περὶ ταύτου καὶ ἑτέρου καὶ πρὸς τὸ γνωρίζειν τί ἕκαστόν ἐστιν... πρὸς δὲ τὸ γνωρίζειν τί ἐστι, διότι τὸν ἴδιον τῆς οὐσίας ἑκάστου λόγον ταῖς περὶ ἕκαστον οἰκείαις διαφοραῖς χωρίζειν εἰώθαμεν.

Discovering differences [*diaphoras*] is useful for the deductions about the same and the other and also for recognizing what each thing is... And [it is useful] for recognizing what it is [*ti esti*] because we are wont to separating the account proper to the substance of each thing [*ton idion tēs ousias hekaston logon*] by the differences appropriate to it [*tais peri hekaston oikeiais diaphorais*].

It appears that “the account proper to the substance of each thing” refers to the definition of this thing and the “differences appropriate to it” are its constitutive differentia(e). Accordingly, Aristotle's point seems to be that by using the constitutive differentiae of something, we can recognize what this thing is because we can obtain its definition by means of the method of division (*diairesis*). So, if “rational” is the differentia of humans, by dividing animal into rational and non-rational and recognizing that all humans and only humans are essentially rational, we can obtain the definition of humans as “rational animal.” As I pointed out above, Aristotle seems to be talking about separating a species from the other species under the same genus by using the differentia(e) of this species in this passage, while according the strict interpretation of the *chōrizein* clause I spelled out above, by using the differentia(e) shared by a group of things under

the same species, we separate all of their non-essential attributes. In other words, in T6, the relevant separation according to the differentiae are between the species under the same genus while according to the strict interpretation of the *chōrizein* clause in Porphyry, the separation according to the differentiae are among the essential and non-essential attributes of things under the same species.⁵⁵¹

As I pointed out in Section 1 above, in *KW* 78, al-Fārābī implies that each species is differentiated from other species under the same genus by its differentia and it is one in the sense of circumscription by a quiddity in this respect, and its unity in this sense is its differentia. As I pointed out also in Section 1 above, in *KH* 89, al-Fārābī asserts that the differentia of something is the specific being (*wujūd*) of that thing according to the sense of being by virtue of circumscription by a quiddity. I argued in Section 1 that in these passages, al-Fārābī talks about circumscription of species, and not directly of individuals; in any case, he clearly perceives the differentia to differentiate and separate a species from the other species under the same genus and in this respect the differentia is that by which the species is one and *is* according to the sense of unity and being by virtue of circumscription by a quiddity. It is possible that the passages like T6 are behind this idea by al-Fārābī; even though, as I pointed out above, in Porphyry's account of the one *eidei* in T5 (2), the function of the differentiae does not seem to be to separate the species from the other species under the same genus, it is still possible that al-Fārābī found inspiration or confirmation for extending his idea of unity by virtue of circumscription beyond the cases of physical circumscription in Porphyry's T5 without taking on Porphyry's characterization of the one *eidei* in T5 (2) completely, and the passages like T6 in Aristotle might

⁵⁵¹ Expressing a similar idea, Alexander says in his commentary on *Top.* IV.1 121b4-14 that "[n]ot only is the genus more extensive than the species, it is also more extensive than the differentia, as [Aristotle] said. And this is correct. For the genera are divided by the differentiae, and a species is circumscribed [*perigraphetai*] by each differentia" (305.28-306.1). In his entry on the *Topics*, Ibn al-Nadīm reports from what Yaḥyā ibn 'Adī says at the beginning of his commentary on the *Topics*: "I could not find any commentary on this work by the ancients except for the commentary of Alexander on some of the first book, and on the fifth, the sixth, the seventh, and the eight books, and the commentary of Ammonius on the first, the second, the third, and the fourth books;" Yaḥyā goes on to say that he based his commentary on these two commentaries by Alexander and Ammonius (Flügel 249.17-21 = Sayyid v.2 163.11-6). Alexander's commentary on Book IV is not mentioned here and I am not aware of a piece of positive evidence that suggests that, unlike Yaḥyā, al-Fārābī had access to it. That said, al-Fārābī could have access to the commentary by Ammonius on the first four book of the *Topics* that Yaḥyā mentions (which, as far as I know, is not extant in Greek or in Arabic translation any more), and it is possible that Ammonius quoted Alexander on this point or Ammonius used similar language to express a similar idea.

have helped him understand the separation by the differentia in the case of the unity of species as the separation of this species from the other species under the same genus.

It is possible that al-Fārābī found a starting-point or a confirmation for his idea of circumscription by a quiddity also in the accounts on the etymology of the Greek terms for definition, i.e., “*horos*” and “*horismos*” that we find in some late antique Greek commentaries, which are meant to illustrate the role of definition in containing the species and separating it from the other species under the same genus, as well as the species under the other genera. For example, Alexander says in his commentary on *Top.* I.5 101b39,

T7 Alexander of Aphrodisias *On Aristotle's Topics*, 41.24-6⁵⁵²

καὶ τί ποτε σημαίνει τὸ ὄνομα τοῦ ὀρισμοῦ, ἀποδίδωσι. μετενήνκεται δὲ τὸ τοῦ ὅρου καὶ τοῦ ὀρισμοῦ ὄνομα ἀπὸ τῶν ὅρων τῶν ἐπὶ τῶν χωρίων, οἷς περιγράφουσιν αὐτὰ καὶ τῶν ἄλλων χωρίζουσιν.

And he gives an account of what the name of the definition [*horismos*] means: the name of the definition [*tou horou kai tou horismou*] is transferred from the boundary-stones [*horōn*] used on estates [*epi tōn chōriōn*], by which people circumscribe and separate [*perigraphousin... kai... chōrizousin*] them from others.⁵⁵³

So the Greek terms for definition, “*horos*” and “*horismos*” gained their technical meaning in philosophy by a metaphorical extension of the meaning of “*horoi*” as the stones that were used to mark the boundaries between estates. Just as a definition contains everything that falls under the kind it is the definition of and “circumscribes” them from the things falling under other kinds, the boundary-stones mark the boundary of an estate which contains this estate and only in this estate so that the boundary-stones for an estate “circumscribe” and “separate” this estate from other estates.⁵⁵⁴

⁵⁵² This text is brought to my attention by Stephen Menn.

⁵⁵³ As mentioned in Footnote n.551 above, Ibn al-Nadīm reports from Yahyā that he had access to some of Alexander’s commentary on *Topics* Book I. Besides, as Menn points out in his article *Al-Fārābī’s Kitāb al-Ḥurūf*, 89, al-Fārābī explicitly cites Alexander’s commentary on the *Topics* at *KH* 246 223.9-10, and Menn suggests that this is a reference to 53.2-10 in Alexander’s commentary on *Top.* I.

⁵⁵⁴ This account of the etymology of the terms for definition is also presented, with some differences in details, close to the beginning of the introduction to philosophy accounts prefixed to the late antique commentaries on the *Isagoge*, namely, Ammonius (1.6-10), Elias (4.34-5.8), and David (15.11-27). The same account can also be found in one of the earliest Arabic logical works, i.e., in Ibn al-Muqaffa’*’s Logic* (al-Mantīq), Ibn al-Muqaffa’, Ibn Bihriz, *Al-*

The idea that the definition of a kind contains everything that falls under that kind and separates them from things under other kinds does not capture all of al-Fārābī's idea of circumscription by a quiddity, if I am right in thinking that it is more likely that al-Fārābī was committed to the existence of individual quiddities. However, as I explained in Section 1, there is a sense in which a species (or the individuals under a species) is circumscribed from other species (or individuals under other species) by the quiddity of this species that is universally shared by the individuals under it; this quiddity in the mind which is universal like its formula, i.e., the definition, circumscribes this species from the other species under the same genus as well as from the species under the other genera.

Finally, even al-Fārābī's idea of an individual's circumscription by its individual quiddity from other individuals might be influenced by some ideas in the late antique Greek commentaries. For example, Ammonius says in his commentary on *Isagoge* 2.18,

T8 Ammonius, *On Isagoge*, 63.17-21

ἄτομα δὲ λέγεται ταῦτα, ἐπεὶ μὴ τέμνεται μήτε εἰς ὁμοιοειδῆ μήτε εἰς ἀνομοιοειδῆ, ὥσπερ τὰ γένη καὶ τὰ εἶδη, ἀλλ' ἅμα τῇ τομῇ φθείρεται· τὸ γὰρ ἐν ἐμοὶ ζῶον οὐκ ἔστι κοινόν, ἀλλ' ἐν ἐμοὶ περιγέγραπται, ὁμοίως καὶ τὸ λογικόν· καὶ τὸ ἐκ πάντων σύγκριμα ὁ ἄνθρωπος περιώριστα.

These are said to be individuals since they are not divided into things of the same *eidōs* or things of different *eidē* [*mēte eis homoeidē mēte eis anomoioeidē*] like the genera and the species, but they perish when they are divided; for the animal in me [*to gar en emoi*

Manṭiq li-bn al-Muqaffā', *Hudūd al-Manṭiq li-bn Bihrīz*, ed. Moḥammad Taqī Dāneshpazhuh (Tehran: Anjoman-e Shāhanshāhi Falsafe-ye Irān, 1978), page 1 lines 11-3. Commentaries on the *Isagoge* are not recorded in the *Fihrist*, but as the early Arabic logical works like Ibn al-Muqaffā's *Logic*, Ibn Bihrīz's *Definitions of Logic* (*Hudūd al-Manṭiq*) (which can also be found in Dāneshpazhuh's edition cited right above), and Qusṭā ibn Lūqā's short introduction to philosophy account (edited and translated by Hans Daiber in "Qusṭā Ibn Lūqā (9. Jh.) über die Einteilung der Wissenschaften," *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 6 (1990): 93–129) show, various discussions found especially in the introduction to philosophy accounts prefixed to the late antique Greek commentaries on the *Isagoge* made their ways into Arabic logical works through Syriac or perhaps directly from Greek (more on the Arabic reception of the Greek introduction to philosophy accounts prefixed to late antique *Isagoge* commentaries, see Christel Hein, *Definition und Einteilung der Philosophie: Von der spätantiken Einleitungsliteratur zur arabischen Enzyklopädie* (Frankfurt: Peter Lang, 1985), especially part 1 (p.33-237)). Al-Fārābī was certainly familiar with at least some of the discussions found in these late antique Greek introduction to philosophy accounts (see, for example, Chapter 1 Section 4 on the similarities between the division of philosophy accounts in these Greek introductions to philosophy prefixed to the *Isagoge* commentaries and some of al-Fārābī's division of philosophy accounts).

zō(i)on] is not common [*koinon*], but it has been circumscribed in me [*en emoi perigegraftai*], and so is the rational [in me]; also the compound produced out of these all, i.e., the human, has been delimited [*periōristai*].⁵⁵⁵

In this passage, Ammonius does not elaborate on the animal in me or the rational in me or the human in me which is not common, i.e., shared by other human beings, but he puts it clearly that, e.g., the animal in me is not common and it has been circumscribed (*perigegraftai*) in me and has also been delimited (*periōristai*); as quoted above in Section 2.b, Philoponus uses these two terms together, apparently meaning more or less the same thing, when he expresses the fact that the proper place of a body “circumscribes and delimits [*perigraphēin kai periorizein*]” that body (518.29-30). A passage like T8 could provide al-Fārābī an inspiration or a confirmation for developing his idea of individual quiddities and that individuals are circumscribed by their individual quiddities so that, e.g., Socrates does not share his individual quiddity with Plato and that Socrates is circumscribed also from Plato by his individual quiddity.

I set out to defend two claims based on my discussion of the Greek texts reviewed in this Section (in both subsections a and b): first, even though al-Fārābī could find some starting-points for articulating his ideas of unity by virtue of circumscription or confirmations of his ideas of unity by virtue of circumscription that he articulated independently in some late antique Greek philosophical texts, none of these Greek texts have so developed an account of the ideas of unity by virtue of circumscription we find in al-Fārābī that we would be justified to claim that al-Fārābī simply took these ideas from these Greek texts.⁵⁵⁶ My second claim is that the Greek texts reviewed in Subsection b on non-physical circumscription do not provide clear points of departure for al-Fārābī’s idea of unity by virtue of circumscription by a quiddity while the Greek texts reviewed in Subsection a on physical circumscription provide *clearer* points of departure

⁵⁵⁵ As I pointed out in the previous footnote, even though the Greek commentaries on the *Isagoge* are not recorded in the *Fihrist*, various parts of these Greek commentaries, especially the discussions in the introduction to philosophy accounts prefixed to the proper commentaries on the *Isagoge* exerted considerable influence in the Arabic introduction to philosophy and logic literature. T8 is from Ammonius’ proper commentary on the *Isagoge*, not from his introduction to philosophy account prefixed to his proper commentary, but it is possible that the observations in T8 were available to al-Fārābī in some shape.

⁵⁵⁶ Stephen Menn brought to my attention that in some Greek Christian theological debates about the Trinity in the late antique period, *perigraphē* and the related Greek terms are used to express an idea similar to al-Fārābī’s idea of circumscription, and that such discussions might have had some influence on al-Fārābī’s idea of circumscription perhaps via Syriac, but due to the limitations of time, I could not undertake this line of inquiry here. I intend to pursue this line of inquiry in the future.

for al-Fārābī's idea of unity by virtue of circumscription by an extremity or by a place. As explained at the beginning of this Section, this second claim, if true, provides another, albeit limited, support to my contention that it is more likely that al-Fārābī first developed his ideas of unity by virtue of physical circumscription and then extended that idea into the idea of unity by virtue of circumscription by a quiddity than the other way around.

Section 3: Al-Fārābī's motivation for developing unity by virtue of circumscription by a quiddity

In the first section, I clarified what al-Fārābī means by circumscription (*inḥiyāz*) and I spelled out the senses of unity by virtue of circumscription by an extremity, by a place and especially the sense of unity by virtue of circumscription by a quiddity. In the second section, I discussed a range of representative texts from late antique Greek philosophical works in which al-Fārābī likely found starting points or confirmations for developing his ideas of circumscription. In the present section, I explain what seems to be the main motivation behind al-Fārābī's developing his idea of unity by virtue of circumscription by a quiddity and extending it to the corresponding idea of being by virtue of circumscription by a quiddity.

I pointed out that al-Fārābī's senses of unity and being *qua* circumscribed by (an extramental) quiddity have an important role in al-Fārābī's ontology, and unlike al-Fārābī's usual practice, there are not clear precedents for these senses of unity and being in Aristotle. This clearly calls for an explanation of why al-Fārābī felt the need to go out of his way by developing these ideas which do not have a clear provenance in Aristotle and by giving them a central role in his ontology.

I argue that al-Fārābī's main motivation for this was to articulate corresponding senses of unity and being that can work well as the senses of unity and being presumed in the argument for the equivalence between being and unity that we find at *Met.* Γ.2 1003b22-34 and *Iota* 2 1054a13-9. I present a reasonable reading of this argument: the relevant senses of being and unity are necessarily coextensive also along with their subsenses so that there are as many subsenses of this sense of being as there are of this sense of unity. According to a fair reading of *Iota* 2, Aristotle seems to identify the sense of unity that is meant in this being-unity equivalence argument as the sense of unity *qua* the first measure of a genus in the way that, e.g., each of the

phonemes is one *qua* the measure for the genus of articulate sounds because an articulate sound, like, “banana” is measured as five phonemes (or more specifically, as three “a”s, two “n”s, and one “b”). I explain two problems with the identification of the sense of unity in the being-unity equivalence argument with this sense of unity as the measure of a genus.

It seems that the being-unity equivalence argument is the only explicit argument Aristotle presents to justify the study of the one (and its kinds or *per se* attributes and their opposites) in the science of being *qua* being. Given the importance of this argument for the overall structure of metaphysics as a science, and given the problems that emerge from Aristotle’s apparent identification of the sense of unity in the being-unity equivalence argument with the mentioned sense of unity as the measure of a genus, it would not be surprising if al-Fārābī could not make sense of Aristotle’s apparent identification of the sense of unity in the being-unity equivalence argument with the mentioned sense of unity as the measure of a genus, and he felt the need to develop some corresponding senses of unity and being which satisfy the requirements stated or implied in the being-unity equivalence argument as spelled out below.

In short, I want to explain why al-Fārābī felt the need to develop his senses of unity and being *qua* circumscribed by (an extramental) quiddity. I argue that al-Fārābī spotted a problem in an important idea in Aristotle’s metaphysics and to fix it, he developed these senses of being and unity. For this purpose, I try to establish that a fair reading of the relevant passages in the *Metaphysics* does present such a problem so that it is reasonable to assume that an intelligent reader of Aristotle like al-Fārābī read those passages as giving rise to that problem. I also explain how al-Fārābī’s senses of being and unity *qua* circumscribed by (an extramental) quiddity fix that problem. For my purpose of explaining al-Fārābī’s motivation for developing these senses of being and unity, all I need is to explain how an intelligent reader of Aristotle like al-Fārābī could read the relevant passages from the *Metaphysics*. So I am not going to discuss the alternative readings of these passages from the *Metaphysics* presented in the secondary literature and compare them with my interpretation to show the advantage of my interpretation over the alternative interpretations of these passages from the *Metaphysics*.

In the first, and very short, subsection (3.a) below, I review the evidence for the internal development of al-Fārābī’s senses of unity by virtue of circumscription and his sense of being by virtue of circumscription by an extramental quiddity. As I argued in the first two sections above,

al-Fārābī seems to have developed his idea of unity by virtue of circumscription by a quiddity from his idea of unity by virtue of physical circumscription (i.e., by an extremity or by a place) rather than the other way around. The review in Subsection 3.a below suggests furthermore that al-Fārābī extended his idea of unity by virtue of circumscription by a quiddity into his idea of being by virtue of circumscription by an extramental quiddity. As argued in Section 1 above, if we restrict our focus to real things, the sense of unity by virtue of circumscription by an extremity or a place applies only to bodies while the sense of unity by virtue of circumscription by a quiddity applies to everything, and so does the corresponding sense of being. These observations suggest that al-Fārābī's motivation for articulating these senses of unity and being by virtue of circumscription by (an extramental) quiddity was likely responding to a theoretical need he perceived that demanded senses of unity and being that apply to everything and that are very closely connected. The place in Aristotle's *Metaphysics* that most prominently talk about a close connection between the relevant senses of being and unity that apply to everything is his argument for the strong equivalence between being and unity. The longer version of this argument is found at *Met.* Γ.2 1003b22-34 and the shorter version of it is found at Iota 2 1054a13-9. In the following, and much longer, two subsections (3.b and 3.c), I present a reasonable reading of the Γ.2 and the Iota 2 versions of this argument respectively, and I spell out the problems that emerge from a reasonable reading of the Iota 2 version of the argument. I also explain that it was not unlikely for al-Fārābī to find it difficult to make sense of important details in Aristotle's account in Iota 2. In the end, I explain how al-Fārābī's senses of unity and being by virtue of circumscription by (an extramental) quiddity make good sense as the senses of being and unity presumed in the being-unity equivalence argument.

a. Al-Fārābī's circumscription by (an extramental) quiddity: from unity to being

We can observe a pattern in al-Fārābī's development of his senses of unity and being by virtue of circumscription. First, as I argued in Sections 1 and 2 above, it seems more likely that al-Fārābī developed his sense of unity by virtue of circumscription by a quiddity by extending the idea of circumscription from his senses of unity by virtue of circumscription by an extremity or by a place than the other way around. Moreover, he seems to have developed his sense of *being* by virtue of circumscription by an extramental quiddity from his sense of *unity* by virtue of

circumscription by a quiddity. First of all, as explained in Section 1, it is not hard to see why al-Fārābī would think that physical circumscription individuates things. In other words, we would say that a corporeal thing is one if it is physically circumscribed, i.e., that its extremity or its place contains it and only it so that its extremity or place, as it were, wraps it into one whole separate from other things. As also explained in Section 1, this idea also seems to lie at the core of al-Fārābī's sense of unity by virtue of circumscription by a quiddity: if we understand circumscription more generally, we can also talk about something's circumscription by its quiddity in the sense that this thing has its quiddity and only this thing has its quiddity so that its quiddity, as it were, wraps this thing into a whole separate from other things. So there is a clear reason for why one would call something which is circumscribed by its extremity, place, or quiddity one deriving from an analysis of the meanings of unity or individuation: X's circumscription by Y means that Y contains X and Y separates X from other comparable things. Insofar as Y contains X, X is not merely a heap of its parts but its parts are 'unified' by Y which contains them all. Also, insofar as Y separates X from other comparable things, X is not *merely* a part of a greater whole without a distinct character of being one thing on its own, but X is separated from the comparable things by Y in the relevant ways. So the idea of circumscription is indispensable to the senses of unity virtue of circumscription by a quiddity, but we cannot say the same about the sense of being by virtue of circumscription by an extramental quiddity. There does not seem to be such an intrinsic reason deriving from an analysis of the meanings of the term "being" that justifies the use of the idea of circumscription to explain a sense or aspect of being. So there must be some reason other than a pure analysis of what "being" means for al-Fārābī to articulate his sense of being by virtue of circumscription by an extramental quiddity. This suggests that under some philosophical pressure other than merely spelling out results of his analysis of the meanings of the term "being" al-Fārābī extended the use of the idea of circumscription by a quiddity from explaining a sense of unity to articulating a corresponding sense of being.

Al-Fārābī also shows signs of his awareness of the fact that the idea of circumscription is not indispensable to the sense of being by virtue of circumscription by an extramental quiddity as it is to the sense of unity by virtue of circumscription by a quiddity. In his discussion of the sense of being by virtue of circumscription by an extramental quiddity in *KH*, al-Fārābī sometimes allows himself to slip into simply saying that something *is* (*mawjūd*) in the relevant sense of

being because it has (*lahu*) an extramental quiddity, instead of saying fully that it *is* (*mawjūd*) in the relevant sense of being because it is circumscribed (*munḥāz*) by an extramental quiddity.⁵⁵⁷ By contrast, when al-Fārābī talks about the senses of unity by virtue of circumscription by an extremity, a place, or a quiddity in *KW*, he does not seem to say simply that something is one in the sense of unity by virtue of circumscription by an extremity, or a place, or a quiddity because it has an extremity, or a place, or a quiddity. This is for a good reason because we do not call a body one in these senses simply because it *has* its extremity or its place or its quiddity, but because it *has* its extremity or place or quiddity *uniquely* so that its extremity, place, or quiddity contains it and separates it from other things by means of which it is unified or individuated. So circumscription is crucial to these senses of unity but it seems that what is crucial to the sense of being by virtue of circumscription by an extramental quiddity is not circumscription but having an *extramental* quiddity. As I explained in Chapter 1 Section 6 and Chapter 3 Section 1, the other main sense of being for al-Fārābī is being *qua* true (*ṣādiq*) and this sense of being expresses that our conceptualization of something is instantiated in reality. So, a major contrast with the sense of being *qua* true and the sense of being *qua* circumscribed by a quiddity is that the former primarily applies to thoughts in the soul (or expresses a relation between thoughts and aspects of reality) while the latter directly applies to extramental things, i.e., real things outside the soul. So when we say that something has an *extramental* quiddity (or quiddity outside the soul), we tacitly contrast it with something that is in the soul. Moreover, as I pointed out above in Chapter 3 Section 1, al-Fārābī applies the sense of unity by virtue of circumscription by a quiddity both to things outside the soul as well as things inside the soul (i.e, what is “circumscribed by its quiddity, whatever quiddity it may be ... conceptualized [*mutaṣawwara*] or extramental [or outside the soul, *khārija al-nafs*]” (*KW* 17 51.5-7 =50.1-2)), and perhaps even to things that are *only* inside the soul, like the void. So, even though the language of circumscription by a quiddity

⁵⁵⁷ See, for example, *KH* 92 118.12-4: when someone says that something *is* (*mawjūd*), we should ask him to specify whether he used *mawjūd* in the sense of being *qua* true, or “whether he meant that it has an extramental quiddity in some way.” *KH* 92 119.7-8: “so the beings in whose cases ‘being’ means what has an extramental quiddity... [*...al-mawjūdāt allatī yu ‘nī bi-l-mawjūd fihā mā lahu māhiyya khārija al-nafs*].” *KH* 93 119.9: “The being [*al-mawjūd*] which means what has an extramental quiddity...” *KH* 104 128.8-9: contrasting “thing [*shay*]” with “being [*mawjūd*];” “when we say ‘this thing’ we mean by this what has some quiddity [which can be outside of the soul, or conceptualized (*mutaṣawwar*), i.e., in the soul].” By contrast, “being [*al-mawjūd*] is said only of what has an extramental quiddity and it is not said of a quiddity which is merely conceptualized; for this reason ‘thing’ is more general than ‘being’.”

is used both in the relevant sense of unity as well as in the relevant sense of being, what is distinctive in the relevant sense of being is that we deal *only* with extramental quiddities.

In short, in the relevant sense of being, what is meant by “circumscription [*inḥiyāz*]” fades into an indistinct sense of possession as indicated by al-Fārābī’s apparent indifference to simply saying that something *is* (*mawjūd*) in this sense of being because it has an extramental quiddity. Nevertheless, al-Fārābī does not formulate the relevant sense of being as being by virtue of *having* an extramental quiddity or using some other verb but precisely as being by virtue of *circumscription* by an extramental quiddity, carrying the idea of circumscription from its more natural place in unity over to being.

As I just reminded the reader, of the two main senses of being spelled out in al-Fārābī’s *KH*, the sense of being applying to extramental reality is the sense of being by virtue of circumscription by an extramental quiddity. It is at first sight not clear why al-Fārābī formulates his main sense of being applying to reality using the idea of circumscription that does not seem to be indispensable to this idea of being. Al-Fārābī must have had a strong theoretical reason to formulate this main sense of being using the idea of circumscription he carried over from the sense of unity by virtue of circumscription by a quiddity instead of formulating this sense of being perhaps more accurately as the sense of being *qua having* an extramental quiddity. This strong theoretical reason must have something to do with a need to formulate some senses of being and unity that are very closely associated. Taking a closer look at the logical relation between the relevant senses being and unity would help us identify which features al-Fārābī wanted these senses of being and unity to have so that they can perform the function demanded by the theoretical reason that motivated al-Fārābī to articulate his sense of being by virtue of circumscription by an extramental quiddity by transferring the idea of circumscription by a quiddity from his sense of unity by virtue of circumscription by a quiddity. As I pointed out in Section 1 above, these senses of being and unity apply to every real thing (i.e., something with an extramental quiddity). If we just focus on things with extramental quiddities, they are coextensive, and they are coextensive in a strong sense: whatever we pick, say X, X *is* in the sense of being *qua* circumscribed by its extramental quiddity and X *is* one in the sense of unity *qua* circumscribed by its quiddity, and on account of *the same fact* that X is circumscribed by its quiddity, both our claim that X *is* in this sense of being and that X *is* one in this sense of unity are true. So the relevant senses of being

and unity apply to every real thing on account of the same fact about it, and in this respect these senses of being and unity are necessarily coextensive. As we will see more clearly below, Aristotle's argument for the equivalence between being and unity presume some senses of being and unity which are necessarily coextensive and have the widest scope of application.

b. Γ.2 version of the being-unity equivalence argument in Aristotle (1003b22-34)

Aristotle presents his argument for the equivalence between being and unity more extensively at *Met.* Γ.2 1003b22-34 and we have a shorter version of this argument at Iota 2 1054a13-9 too. Let me first reproduce the Greek text of the Γ.2 argument with its medieval Arabic translation by Uṣṭāth:

T1 *Met.* Γ.2 1003b22-34, Uṣṭāth's translation in *Long Commentary* 310.2-311.2

[1] εἰ δὴ τὸ ὄν καὶ τὸ ἓν ταὐτὸν καὶ μία φύσις τῷ ἀκολουθεῖν ἀλλήλοις ὥσπερ ἀρχὴ καὶ αἴτιον, ἀλλ' οὐχ ὡς ἐνὶ λόγῳ δηλούμενα (διαφέρει δὲ οὐθὲν οὐδ' ἂν ὁμοίως ὑπολάβωμεν, ἀλλὰ καὶ πρὸ ἔργου μᾶλλον).

[2-α] [a] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [b] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ ἔστιν [OR ἐστίν] ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος.

[2-β] [a] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [b] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστίν ἄνθρωπος καὶ ἔστιν ἄνθρωπος.

[3] δῆλον δ' ὅτι οὐ χωρίζεται οὐτ' ἐπὶ γενέσεως οὐτ' ἐπὶ φθορᾷ, ὁμοίως δὲ καὶ ἐπὶ τοῦ ἑνός· [4] ὥστε φανερόν ὅτι ἡ πρόσθεσις ἐν τούτοις ταὐτὸ δηλοῖ, καὶ οὐδὲν ἕτερον τὸ ἓν παρὰ τὸ ὄν, [5] ἔτι δ' ἡ ἐκάστου οὐσία ἓν ἐστίν οὐ κατὰ συμβεβηκός, ὁμοίως δὲ καὶ ὅπερ ὄν τι· [6] ὥσθ' ὅσαπερ τοῦ ἑνὸς εἶδη, τοσαῦτα καὶ τοῦ ὄντος.

[1] If being [*to on*] and the one [*to hen*] are the same and one nature by following each other just like principle [*archē*] and cause [*aition*], but not as being denoted by one

formula [*logos*] (in fact, it would not make any difference if we assumed so; it would be even in a greater defense of the matter [*pro ergou mallon*]⁵⁵⁸);

[2-α] [a] for *one* human, human *that is* [*ōn anthrōpos*], and human are the same, [b] and it does not denote another thing when it is repeated in speech [*kata tēn lexin epanadiploumenon*], [as in the expressions] “human is,” “human,” and “*one* human” [OR “the human is both human and one human”].

[2-β] [a] for *one* human and human are the same, and human *that is* and human [are the same], [b] and it does not denote another thing when it is repeated in speech, [as in the expressions] “human is one” and “human is.”

[3] and it is clear that it does not come apart [*chōrizetai*] in generation or corruption and it is also like this in the case of the one; [4] so it is clear that the addition in these cases denotes the same thing, and the one is nothing beyond being; [5] moreover the substance of each thing [*hē hekastou ousia*] is one not accidentally, and similarly it is also that which *is* something [*hoper on ti*]. [6] Therefore, there are as many kinds of the one as there are of being.

[1] وأما الواحد والهوية إذا كانا شيئا واحدا وكان لهما طباع واحد فاتباع كل واحد منهما لصاحبه كاتباع الاول والعلة بعضها بعضا وليس لأن حدّا واحدا يدل على كليهما (فلا فصل فيما بينهما وإن ظننا مثل هذا الظن)⁵⁵⁹ [2-3] لأن قول القائل إنسان واحد أو إنسان هو أو إنسان هذا يدل على شيء واحد ولا يدل على أشياء مختلفة إذا كررها فمعلوم بأن الكلمة التي تقول إنسان هو أو إنسان واحد لا تدل على أشياء مختلفة إذ لا فرق بين قول القائل إنسان هو أو إنسان لا في الكون ولا في الفساد وكذلك القول في الواحد أيضا [4] فمعلوم أن الزيادة في هذه تدل على شيء واحد ولا يدل الواحد على شيء آخر غير الهوية [5] وأيضا نقول إن جوهر كل واحد من الأشياء واحد لا بنوع العرض ولذلك⁵⁶⁰ نقول إن جوهر كل شيء هوية [6] فمعلوم أن صور الواحد على عدد صور الهوية

Before I discuss Aristotle’s argument, let me make a few remarks on the Greek and the Arabic texts reproduced above. The Greek text is from Jaeger’s edition except for (2). The textual tradition does not show substantial variants except for the corrupt passage (2). The textual

⁵⁵⁸ I would like to thank Heide König for the conversation we had on the translation of this phrase.

⁵⁵⁹ It seems that the translator Uṣṭāth’s exemplar did not have ἀλλὰ καὶ πρὸ ἔργου μᾶλλον at the end of T1 (1) because he translates only διαφέρει δὲ οὐθὲν οὐδ’ ἂν ὁμοίως ὑπολάβωμεν = فلا فصل فيما بينهما وإن ظننا مثل هذا الظن.

⁵⁶⁰ Although the Arabic ms. of Averroes’ *Long Commentary* has and the two Hebrew translations of it consulted by Bouyges presume كذلك here, as Bouyges suggests, it is reasonable to assume that Uṣṭāth’s original Arabic translation had كذلك, translating the Greek ὁμοίως.

tradition of the Greek original of the *Metaphysics* splits into two major traditions called the alpha and the beta traditions. For (2) above, I reproduce the readings of both the alpha and the beta traditions. Depending on whether we take the *estin* in the alpha reading of (2.b) to be existential or predicative *estin*, we can interpret the example in the alpha reading of (2.b) in two ways, and I present above the translation of (2.b) of the alpha reading according to both interpretations, putting the translation of the passage where *estin* is taken predicatively in square brackets. In Appendix: Γ.2 version of the being-unity equivalence argument below I reproduce the readings of two mss. from each tradition, and this appendix contains a brief explanation of how I understand the readings of the alpha and the beta traditions as reproduced above based on the readings we find in those mss. In the present subsection, I discuss the interpretation of the whole Greek text except for (2.b). I discuss the interpretation of (2.b) according to both readings in Appendix: Γ.2 version of the being-unity equivalence argument. It becomes clear that if the whole T1 is read without (2.b), it would present more or less the same basic idea as it does if the text is read with (2.b).

The Arabic translation by Uṣṭāth reproduced above is from the Textus in Averroes' *Long Commentary* edited by Bouyges. The Arabic text follows the Greek text without any major differences in meaning⁵⁶¹ except for (2)-(3). As I discuss below, if someone read this Arabic translation of T1 without being able to fully understand what Aristotle meant in T1 (2)-(3), this person would still probably get more or less the same basic idea from the whole T1 as he would if he read T1 with a faithful Arabic translation of T1 (2)-(3). I discuss Uṣṭāth's translation of T1 in Appendix: Γ.2 version of the being-unity equivalence argument. I argue in this appendix that whichever version of Uṣṭāth's translation al-Fārābī read, he probably understood the basic idea of T1 the same way that he would understand it if he could directly read the Greek text.

Let me first make some general remarks on this argument and its context, then I will discuss this argument in detail also with the help of the Iota 2 version. It seems that (1) is a premise with (2)-(4) explaining it and then (5) is another premise (see the *eti d'* at the beginning of (5)), and (6) is the conclusion (*hōst* '). Accordingly, the argument can be reconstructed as a first approximation as follows:

⁵⁶¹ That said, there are two differences between the Arabic translation and the Greek text in the rest of T1, but they do not make a big difference in meaning: see the previous two footnotes.

(P1) The one (*to hen*) and being (*to on*) are the same in some relevant respect specified and justified in (1) and (2)-(4) of T1.

(P2) The substance of each thing is one non-accidentally and it also *is* [*on*] non-accidentally.

Therefore, (C) there are as many kinds of being as there are of the one.

I will discuss in detail how P1 is specified and justified in (1) and (2)-(4) of T1. I will also explain how (P2) relates to the equivalence between being and the one and how we should understand both premises in order for this conclusion to follow from them. But I want to first place this argument in its context in the account of the subject-matter of metaphysics in *Met.* Γ.1-2. As I briefly discussed in Chapter 1 Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ, Aristotle presents his account of the subject matter of metaphysics in Γ.1-2 and mostly what I called the ontology part of metaphysics. He first states that metaphysics is the science of being *qua* being and its *per se* attributes (Γ.1). He adds that a science has as its subject a genus or it can also have genera which are related to a particular genus by focal equivocacy. Metaphysics studies all beings *qua* being and beings do not fall under a single genus but all beings are organized with focal equivocacy with substance as the focal genus (Γ.2 1003a33-b19). Then Aristotle asserts that when there is a science or one body of knowledge (*epistēmē*) of a subject genus, the *eidē* (species) of this *epistēmē* which is one in genus are *epistēmai* of each of the *eidē* of the subject genus; applying this idea to the *epistēmē* of being *qua* being, he implies that treating being *qua* being as our subject genus, we can say that the *epistēmē* which grasps this subject genus, i.e., metaphysics as a whole, is one in genus and each *eidos* of this *epistēmē* grasps an *eidos* of the underlying genus, i.e., of being (1003b19-22). Then, he explains this last claim until 1004a9, and the being-unity equivalence argument reproduced above as T1 forms the beginning of this explanation. So the conclusion of T1 that there are as many *eidē* of unity as there are of being should be relevant for this argument. As I explained in Chapter 1 Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ, it makes sense given the context of T1 in Γ.2 and the relevant observations in the rest of the *Metaphysics* that the *eidē* of being that Aristotle talks about here are the categories. Besides, as quoted below, it is clearly implied in the Iota 2 version of the being-unity equivalence argument that the relevant *eidē* of being and unity are organized along with the categories. Moreover, as I also explained in Chapter 1 Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ, following the being-unity argument in Γ.2, Aristotle seems to treat (the relevant senses of) being and unity as

interchangeable in a wide range of contexts. In fact, the being-unity argument in $\Gamma.2$ seems to provide the only justification for Aristotle's claims in the rest of $\Gamma.2$ that the science under consideration, i.e., the science of being *qua* being also studies unity (and its kinds or *per se* attributes and their opposites). That the science under consideration also studies unity in addition to being is an important principle that organizes Aristotle's *Metaphysics*. After all, if this work, the *Metaphysics*, discusses unity and multiplicity and the related ideas extensively in *Met. Iota*, and if this work presents a coherent account of a single body of knowledge or science (*epistēmē*), the study of unity and the related ideas should fall under the scope of this *epistēmē* that studies being *qua* being. It seems that the being-unity equivalence argument in $\Gamma.2$ (along with its version in *Iota 2*) is the only explicit argument Aristotle presents to justify the view that the *epistēmē* of being *qua* being also grasps unity and the related ideas.

As I briefly discussed in Chapter 1 Section 2, according to Aristotle's lean account of how a science is structured in *APo.* I.10, a science has a subject genus and it studies the *per se* attributes of this genus (presumably along with the subkinds of this genus). We saw that he relaxes the requirement that a science has a subject genus in *Met.* $\Gamma.2$; as briefly summarized above, Aristotle adds in $\Gamma.2$ that science can have as its subject a genuine genus or it can also have a number of genera which are organized by focal equivocacy. As I briefly reminded the reader above, Aristotle implies at $\Gamma.2$ 1003a33-b19 that in the case of metaphysics, the focal thing is substance, and the other beings, i.e., the things that exist in the accidental categories are said to *be* because they are related to some substances in some regular ways. Aristotle relaxes his lean account of how a science is structured in *APo.* I.10 once more, saying at $\Gamma.2$ 1004a9 that the same science studies the contraries; so if a science studies unity, the same science also studies multiplicity.

Now, since the science of being *qua* being also studies unity (its kinds or *per se* attributes, and their opposites), one possibility is that the one is a *per se* attribute of being. However, Aristotle does not say that it is so even though he has many opportunities to say that both in $\Gamma.2$ and elsewhere in the *Metaphysics*. As I said above, the being-unity equivalence argument seems to be the only explicit justification Aristotle provides for including the study of unity and the related ideas in the science of being *qua* being. Since the being-unity equivalence argument puts forth some sort of 'sameness' between being and unity, this sort of 'sameness' between them should ground the inclusion of the study of unity and the related ideas in the science of being *qua* being.

So, the other possibility is that being and the one are equivalent in a strong sense that justifies the inclusion of the study of the one and the related ideas in the science of being *qua* being. In fact, Aristotle states in many places that being (*to on*) and the one (*to hen*) are the most general attributes in that they apply to everything; in this respect, being and the one are coextensive predicates.⁵⁶² So, being and the one are coextensive either accidentally, or non-accidentally, i.e., necessarily coextensive in some respect. If they are accidentally coextensive, it would be the case accidentally that the one applies to things to which being applies. In other words, if we pick something which *is* (*on*), it accidentally holds of this thing that it is also one (*hen*). If this is all there is to the coextensiveness of being and the one, there would not be any ground to include the study of the one in the science of being *qua* being. As Aristotle expresses in several places including in *Met.* E.2, there is no scientific knowledge of accidental connections; if unity is accidentally connected to being, the science which studies being *qua* being would not also study unity which is accidentally connected to being. Therefore, the one and being must imply each other necessarily in some relevant sense.⁵⁶³ We saw above that Aristotle relaxes the lean account of how a science structured in *APo.* I.10 in two other occasions in Γ .2; it is possible that he relaxes it once more so that a science has as its subject also what necessarily implies and is implied by its subject genus; so just as the science of being *qua* being studies the kinds and *per se* attributes of being and their opposites, it also studies the kinds and *per se* attributes of unity and their opposites.

So far, we established two constraints on our interpretation of the being-unity equivalence argument in Γ .2. First, as clearly implied in the Iota 2 version and from the context of the Γ .2 version of the argument, the relevant *eidē* of being and unity which are said to be equal in number are the categories or organized along with the categories. Second, in order for this argument to justify or explain why the science of being *qua* being also studies unity and the

⁵⁶² See *Top.* IV.1 121a17-8, *Top.* IV.6 127a27-8, 33-4, *Met.* B.3 998b20-1, *Met.* B.4 1001a21-2, *Met.* Iota 2 1053b20-1.

⁵⁶³ In the Kappa version of Γ .1-2, speaking of being and the one, Aristotle says, “for even if they [sc. *to on* and *to hen*] are not the same but other [*allo*], at any rate, they convert; for that which is one also *is* in a way and that which *is* is one [in a way] [*to te gar hen kai on pōs, to te on hen*]” (*Met.* K.3 1061a17-8). As we saw above, Aristotle says in T1 that being and the one are the same but then he specifies in what respect they are the same. So, the question is to determine in what respect the one and being are the same and in what respect they differ. In this passage from K.3 Aristotle does not say as much to specify this as he does in T1. In this passage from K.3, he states the bare-minimum of the relation between *to on* and *to hen* that they are coextensive, as he does in other places (see the previous footnote), but I do not see any reason to assume that these statements imply that *to on* and *to hen* are *merely* accidentally coextensive (according to their relevant senses).

related ideas, this argument must put forth a non-accidental mutual implication between being and unity.

We can say more to specify why being and the one are necessarily coextensive (according to their relevant senses) based on the being-unity equivalence argument in T1 with the help of other relevant passages from the *Metaphysics* on being and the one. In T1 (1), Aristotle starts to specify the relation between being and the one. Let me reproduce T1 (1) for ease of discussion:

T1 (1) *Met.* Γ.2 1003b22-26, Uṣṭāth's translation in *Long Commentary* 310.2-5

[1] εἰ δὴ τὸ ὄν καὶ τὸ ἓν ταὐτὸν καὶ μία φύσις [a] τῷ ἀκολουθεῖν ἀλλήλοις ὥσπερ ἀρχὴ καὶ αἷτιον, [b] ἀλλ' οὐχ ὡς ἐνὶ λόγῳ δηλούμενα (διαφέρει δὲ οὐθὲν οὐδ' ἂν ὁμοίως ὑπολάβωμεν, ἀλλὰ καὶ πρὸ ἔργου μᾶλλον)

[1] If being [*to on*] and the one [*to hen*] are the same and one nature [a] by following each other just like principle [*archē*] and cause [*aition*], [b] but not as being denoted by one formula (in fact, it would not make any difference if we assumed so; it would be in a greater defense of the matter [*pro ergou mallon*])

[1] وأما الواحد والهوية إذا كانا شيئا واحدا وكان لهما طباع واحد فاتباع كل واحد منهما لصاحبه كاتباع الاول والعلّة بعضها بعضا وليس لأن حدّا واحدا يدل على كليهما (فلا فصل فيما بينهما وإن ظننا مثل هذا الظن)

In this premise, Aristotle asserts “being and the one are the same and one nature.” I will briefly address below whether saying that they are one nature⁵⁶⁴ adds anything to saying that they are the same here. So being and the one are the same, and their being one nature either means nothing different or it adds a specification to their sameness. The sameness of being and the one is spelled out positively in (1.a): they are the same “by following each other [*akolouthēin allēlois*] just like principle [*archē*] and cause [*aition*].” Following each other minimally means that being and the one are coextensive: if X *is*, it is also one, and if X is one, it also *is*. As argued

⁵⁶⁴ It is worth noting that the Arabic translation has “*wa-kāna lahumā ṭibā‘ wāḥid*,” meaning “they have one nature” or “one nature belongs to them;” it seems that the translator, Uṣṭāth, interprets the underlying Greek text as if it reads “καὶ [τούτοιον] μία φύσις.” Alternatively, it is possible that the original of the Arabic translation had “*wa-kānā humā ṭibā‘ an wāḥidan*,” the corruption of *كانا هما* into *كان لهما* is not hard to explain, but the corruption of *طباعا واحدا* into *طباع واحد* is harder to explain. So, it is possible that either Uṣṭāth or a later copyist did not understand Aristotle’s claim that being and the one are one nature and interpreted Aristotle’s claim as meaning that being and the one has one nature or one nature belongs to them, or a copyist copied *كانا هما* as *كان لهما* by mistake and then a corrector realized that *كان لهما طباعا واحدا* does not make good sense here and he mistakenly assumed that the copying mistake occurred with *طباعا واحدا*.

above, Aristotle should mean that being and the one are *necessarily* coextensive in some relevant sense. Saying that being and the one *akolouthei* (= *yattabi`u*) each other falls short of specifying that they are necessarily coextensive but it is perfectly consistent with this. One would hope that Aristotle’s likening the mutual implication between being and the one to the mutual implication between principle and cause would clarify the nature of the mutual implication between being and the one. Indeed, the reference to the cause in Aristotle’s discussion of the principle in *Met.* Δ.1 and Aristotle’s use of “principle” and “cause” in other places suggest that principle and cause mutually imply in a strong sense that goes beyond simple accidental coextensiveness; nonetheless, Aristotle’s discussion of principle and cause and his use of these terms do not provide a fully clear picture of the mutual implication between them which would help us gain a precise understanding of the mutual implication between being and the one. Of the terms discussed in *Met.* Δ, Aristotle registers the different senses of the term under consideration, and at the end of his account he usually presents the core idea expressed by this term that underpins the philosophically relevant senses of the term distinguished above (by way of a sort of focal equivocity) or the general philosophical idea expressed by this term that is shared by the philosophically relevant senses of this term distinguished above as being specifications of the general idea. In *Met.* Δ.1, after distinguishing various senses of “principle (*archē*),” he seems to present the general idea of principle that is shared by or that underpins the ideas expressed by this term distinguished above:

T2 *Met.* Δ.1 1013a16-23

ἰσχυὼς δὲ καὶ τὰ αἷτια λέγεται· πάντα γὰρ τὰ αἷτια ἀρχαί. πασῶν μὲν οὖν κοινὸν τῶν
ἀρχῶν τὸ πρῶτον εἶναι ὅθεν ἢ ἔστιν ἢ γίγνεται ἢ γινώσκεται· τούτων δὲ αἱ μὲν
ἐνυπάρχουσαι εἰσιν αἱ δὲ ἐκτός. διὸ ἢ τε φύσις ἀρχὴ καὶ τὸ στοιχεῖον καὶ ἡ διάνοια καὶ ἡ
προαίρεσις καὶ <ἡ> οὐσία καὶ τὸ οὗ ἔνεκα· πολλῶν γὰρ καὶ τοῦ γινῶναι καὶ τῆς κινήσεως
ἀρχὴ τὰ γαθὸν καὶ τὸ καλόν.⁵⁶⁵

⁵⁶⁵ Arabic translation by Uṣṭāth preserved in the *Long Commentary*, 474.9-14: وكذلك يقال العلل أيضا فإن جميع العلل ابتداءات: وكذلك يقولون ويعلم كيف هو وكيف يكون وبعض الابتداءات في الأشياء وبعضها هي خارجة عن الأشياء وكذلك الطبيعة ولجميع الابتداءات شيء مشترك هو الأول ويعلم كيف هو وكيف يكون وبعض الابتداءات في الأشياء وبعضها هي خارجة عن الأشياء وكذلك الطبيعة ابتداء والعنصر أيضا والفكرة والاختيار والجوهر والذي من أجله الخير والجود هو ابتداء لأشياء كثيرة والمعرفة والحركة أيضا. The Arabic translation closely follows an understandable construal of the Greek text except for the four underlined words or expressions. The first وكذلك translates ἰσχυὼς and this is clearly an under-translation; كذلك usually translates ὁμοίως; Uṣṭāth translates τὸ καθ’ ὃ ἰσχυὼς καὶ τὸ αἷτιον ὑπάρχει at Δ.18 1022a19-20 as الذي بذاته والعلّة متساويان في الانية (631.8); he translates λέγεται δ’ ἰσχυὼς τὸ ὄν καὶ τὸ ἔν at Iota 2 1053b25 as والهوية يقال بأنواع مساوية لأنواع الواحد (1272.9); and he translates δῆλον τῷ τε παρακολουθεῖν ἰσχυὼς ταῖς κατηγορίαις further down in Iota 2, at 1054a13-4 (part of T10

[Principle] is said in the same number of ways [*isachōs*] as the causes [*ta aitia*], for all causes are principles. So, it is common to all the principles that it is the primary thing from which something is or comes about or is known; but some of these principles are components [of the things they are the principles of], while the other principles are outside [of the things they are the principles of]. This is why nature is a principle as well as the element, thought [*dianoia*], deliberate choice [*prohairesis*], substance, and that for the sake of which [*to hou heneka*], for the good and the fine [*tagathon kai to kalon*] are a principle for the knowledge and the motion of all.

Aristotle explicitly says in this passage that principle “is said in the same number of ways as the causes” but he does not specify which of the ways in which principle is said corresponds to which way in which cause is said. Aristotle states as an explanation that “all causes are principle;” this claim literally states that if something is a cause, it is also a principle but it does not state whether it is also the case that if something is a principle it is also a cause; yet, from the context, it seems to be implied that this converse also holds. So, (according to the philosophically relevant senses of “principle” and “cause”) something is a principle just in case it is a cause. The relevant ways in which cause is said seem to be the four causes distinguished by Aristotle at *Met.* Δ.2 1013a24-b28 = *Phys.* II.3 194b23-5a26,⁵⁶⁶ i.e., material, formal, efficient, and final causes because the general types of principles Aristotle mentions in T2 roughly cover these four types of causes. As he puts it, “nature is a principle as well as the element, the thought [*dianoia*], the deliberate choice [*prohairesis*], substance, and that for the sake of which.” As Aristotle puts it in *Phys.* II.1, nature is the principle of motion and rest for something and nature is in it primarily and *per se*, not accidentally; also, we can call the matter or the form of something its nature, but more properly its form. As explained in *Met.* Δ.3, an element is the primary component of

below) as فبين فإن أنواع متابعيتها للمقولات متساوية (1278.7-8). As for the second underlined expression, Uṣṭāth clearly did not read ὅθεν; he accurately translates ὅθεν as الذي منه at the beginning of the chapter. It appears that instead of ὅθεν ἢ ἔστιν ἢ γίγνεται ἢ γινώσκειται, he read something like ποῖον [or ὁποῖον] ἢ ἔστιν ἢ γίγνεται γινώσκειται. The next underlined word, كذلك was probably لذلك in the original Arabic translation (as also suggested by Bouyges), translating διὸ, and the final underlined word, و was probably ف in the original Arabic translation, translating γὰρ. As I explain in what follows, from the Greek text of T2, it is not easy to understand precisely the logical relation between principle and cause; it seems that from its Arabic translation understanding this might even be harder.

⁵⁶⁶ See in particular 1013b3-4, 16-7 for the label “ways” (*tosautachōs, tropoi*) applied to the four traditional Aristotelian causes, i.e., material, formal, efficient, and final; Aristotle also speaks of “ways [*tropoi*]” when he starts to introduce the modes of being a cause at 1013b28 which cuts across the four causes distinguished above, i.e., prior / posterior, *per se* / *per accidens*, actual / potential, simple / in combination, but from Aristotle’s examples of principles in T2, it seems that he has in mind the division of the four traditional Aristotelian causes in mind when he says that principle is said in as many ways as cause.

something; this means the primary things it is composed of and can be divided into, i.e., the ultimate ‘material’ components, or the primary things its definition (or more properly its essence) is composed of, i.e., the ultimate ‘formal’ components. Thought (*dianoia*) here seems to be meant as the efficient cause in production (*poiēsis*), i.e., in crafts, and deliberate choice is the efficient cause in action (*praxis*).⁵⁶⁷ Aristotle says that substance can mean the matter or the form or the form-matter composite (e.g., *Met.* H.1 1042a24-31, *DA* II.1 412a6-9); since the form-matter composite is the end result, when he says that substance is a principle in T2 (i.e., as put in T2, “the primary thing from which something is or comes about or is known”), he must mean either the matter or the form or both, and not substance in the sense of the form-matter composite. So, so far the major kinds of material, formal, and efficient causal principles in reality are mentioned as examples of principles in T2; finally, in T2, Aristotle mentions that that for the sake of which is a principle because “the good and the fine are a principle for the knowledge and the motion of all.” In this way, the major causal principles in reality according to all the four causes are covered in T2.

In T2 Aristotle suggests that cause and principle are equivalent in a sense stronger than accidental coextensiveness, but T2 does not help us much with specifying the exact logical relation between cause and principle which would in turn help us specify the exact logical relation between being and the one.

In short, the positive description of the sameness of being and the one in T1 (1.a) seems to suggest that being and the one are equivalent in a sense stronger than mere coextensiveness, but this positive description does not help us much with specifying this relation more precisely. In T1 (1.b), Aristotle spells out the sameness of being and the one negatively: they are not the same “as being denoted by one *logos* (in fact, it would not make any difference if we assumed so; it would be even in a greater defense of the matter.” If being and the one were denoted by the same *logos*, they would have the same definition or meaning; they would be like “mantel (*himation*)” and “cloak (*lōpion*),” or “wine (*oinos*)” and “liquor (*methu*),” which are the examples Aristotle gives in other places for two terms with the same definition or meaning; the ancient commentators call such two terms or the things denoted by such terms insofar as they are denoted by such terms

⁵⁶⁷ See *Met.* E.1 1025b18-25 and *EN* VI.2 1139a31-2. Also compare *Met.* Z.7 (especially 1032a27-8, b15-7) and *EN* III.3 (especially 1112a30-34, 1112b31-3a12).

poluōnuma.⁵⁶⁸ Aristotle adds that if being and the one were implying each other by having the same meaning, this would be even better for what Aristotle wants to establish in the being-unity equivalence argument because the aim of this argument is to establish the strong correspondence between being and unity from which it follows that the relevant subsenses or *eidē* of being correspond to those of the one. Of course, if “*to on*” and “*to hen*” are terms with the same definition, they would be coextensive in the strongest way possible for two distinct terms, and trivially the *eidē* of being would be just the *eidē* of the one.

Recall that at the beginning of T1 (1), Aristotle says that “being and the one are the same and one nature.” If two things are the same nature, this can mean in a strong sense that they have the same essence. Since being and the one are not denoted by the same *logos*, they do not have the same essence in the strong sense either. So, when Aristotle says that they are one nature, he should mean minimally that one nature, say a human, is said to be both *on* and *hen*, or maybe he means more specifically that a human is said to be both *on* and *hen* according to the senses of being and unity presumed in the being-unity equivalence argument on account of the nature or essence of the human. I say more on this below.

So, Aristotle’s point in T1 (1.b) is that the mutual implication between being and the one is not as strong as the mutual implication between the *poluōnuma*. We are talking about two coextensive terms; we saw that they are necessarily coextensive, but this is not because they are denoted by the same *logos* or they have the same meaning. Their necessary coextensiveness must be grounded in a relation that is weaker than having exactly the same meaning. There is a good candidate for such a relation between two terms that Aristotle mentions in *Phys.* III.3. In this chapter, Aristotle explains his claim that the motion is in what is moved, and the actuality of what is moved and what moves is in a sense the same actuality; to specify in what sense it is the same actuality, Aristotle likens this sameness to the way that “the interval [*diastēma*] of one to two and the interval of two to one are one and the same interval and so are the ascent and the descent [*to anantes kai to katantes*]; for these are one but their *logos* is not one; it is also similar in the case of what moves and what is moved” (202a18-21). Further down, Aristotle adds that acting (*poiein*) and being acted on (*paschein*) are the same but not in the way that “the *logos*

⁵⁶⁸ More on Aristotle’s examples of such terms, and the discussion of the *poluōnuma* in the late antique Aristotle commentators, see Chapter 2 Section 5 Footnote n.406.

stating their essence [i.e., their definition] is one as in the case of the mantle [*himation*] and the cloak [*lōpion*], but [they are the same] in the way that the road from Thebes to Athens and the road from Athens to Thebes [are the same], just as we also mentioned above” (202b11-4) . Although Aristotle does not put this explicitly, it is clear that, e.g., “the road from Athens to Thebes” and “the road from Thebes to Athens” do not refer to the same thing accidentally. It is inconceivable that we have a road from one place to another which is at the same time not a road from the second place to the first (I am assuming that our roads are simple roads without a directional determination). Likewise, if there happens to be a path which ascends from the lower point to the higher point, the same path must also be a path which descends from the higher point to the lower point. Likewise, if we happen to have one unit of something and two units of the same thing, we would have an interval between them both as one unit of excess when the two units is compared to the one unit and as one unit of deficiency when the one unit is compared to the two units.⁵⁶⁹ Alexander calls such terms (or what is denoted by such terms insofar as they are denoted by such terms) *heterōnuma*. To be precise, I will speak of heteronymous *terms* not things. Alexander describes the *heterōnuma* in contradistinction with the *poluōnuma* in his commentary on *Top.* V.4 prompted by Aristotle’s claim at 133b15 that “the same and the other are said in many ways:”

T3 Alexander of Aphrodisias, *On Aristotle’s Topics*, 397.21-398.9

τὸ ταῦτὸν καὶ τὸ ἕτερον πλεοναχῶς λέγεται· [1] καὶ γὰρ καὶ γένει καὶ εἶδει καὶ ἀριθμῷ καὶ ἀναλογίᾳ. [2.a] καὶ τὸ μὲν τι καὶ τῷ ὑποκειμένῳ καὶ τῷ λόγῳ ταῦτόν ἐστιν, ὃ ὑπάγοιτ’ ἂν τὸ κατ’ ἀριθμὸν ταῦτόν, [2.b] τὸ δέ τι κατὰ τὸ ὑποκείμενον μόνον ταῦτόν λέγεται, ὡς ἐπὶ τῶν ἑτερωνύμων· τούτων γὰρ τὸ μὲν ὑποκείμενον ἔν τε καὶ ταῦτόν ἐστιν, ὁ μὲντοι λόγος αὐτῶν οὐχ ὁ αὐτός, ὡς ἐπὶ ἀναβάσεως ἔχει καὶ καταβάσεως, ὅταν κατὰ ἑνός, τῆς κλίμακος, καὶ ἄμφω τὰ ὀνόματα λέγηται· τὸ γὰρ ὑποκείμενον ἔν ἐστιν, αὐτὴ ἡ κλίμαξ. [3] λέγεται ταῦτόν καὶ τὸ ὑποκείμενον μετὰ τοῦ συμβεβηκότος αὐτῷ τῷ

⁵⁶⁹ Castelli also points out that these pairs of terms are not accidentally coextensive but they are *necessarily* coextensive: see, *Problems and Paradigms of Unity*, 207, 266-7 where she also points out the similarities between these cases, on the one hand, and the one and being in the being-unity equivalence argument, on the other, in that in both cases we have two non-accidentally co-extensive terms which are not denoted by the same *logos*. She seems to be led to observe the similarities between these cases and the one and being in the being-unity equivalence argument by the prompting of Alexander in his commentary on the Γ.2 version of the being-unity equivalence argument as I was (see, in particular, Castelli, *Problems and Paradigms of Unity*, 207). More on Alexander’s interpretation of this argument, see below.

ὑποκειμένῳ, οἷον λευκὸς ἄνθρωπος ἀνθρώπῳ. τὰ δὲ οὕτως λεγόμενα ταῦτα οὐχ ἀπλῶς ἐστὶ ταῦτα ἀλλὰ τῷ ὑποκειμένῳ, τῷ δὲ λόγῳ ἕτερα· ἕτερος γὰρ λόγος ἀνθρώπου καὶ ἕτερος λευκοῦ ἀνθρώπου, καίτοι κατὰ τὸ ὑποκείμενον ἓν ἐστὶν ἄμφω.

“The same and the other are said in many ways;” [1] for it is both the case that [things are said to be the same or other] in genus, in species, in number, and in analogy, [2.a] and it is also the case that on the one hand, something is said to be the same in subject and in *logos*, under which the one in number is subsumed, [2.b] and on the other hand, something is said to be the same only in respect of the subject, as in the case of the *heterōnuma*; for the subject of these is one and the same but their *logos* is not the same, as it is the case with “the ascent” [*anabasis*] and “the descent” [*katabasis*], since both names are said of one thing, i.e., the ladder, for their subject is one, i.e., the ladder itself. [3] Also the subject together with the accident belonging to this very subject is said to be the same; for example, white human [is said to be the same] as human. But the things which are said to be the same in this way are not the same simpliciter but in subject, while they are other in *logos*; for the *logos* of human is other than the *logos* of white human, even though the subject of both is one.

At the beginning of T3, Alexander quotes “[t]he same and the other are said in many ways” from *Top.* V.4 133b15 and explains this claim by presenting two different ways to divide the kinds of the same (and hence of its contrary, the other) (observe (1) *kai gar...* (2) *kai...* in the Greek text). The first division of the kinds of the same is presented in (1) where Alexander reminds the reader of his interpretation of *Top.* I.7 that there are three kinds of the same (and hence of its contrary, the other), the same in genus, in species, and in number, and that sometimes the same in analogy is also added (58.3-6), so that we would have the four general kinds of the one (and the same) discussed in Chapter 2 Sections 3 and 4. In (2), Alexander presents a different division of the ways in which the same is said. In this second division of the same, the first kind is (2.a) the same said of the *poluōnuma*, like the “*himation*” and the “*lōpion*,” and the one in number is subsumed under this; indeed, as discussed in Chapter 2 Section 5, the *poluōnuma* seem to constitute the first case of the same in number distinguished at *Top.* I.7 103a23-31. In this second division of the same, the second kind is (2.b) the same said of the *heterōnuma* and Alexander contrasts them with the *poluōnuma*. The polyonymous terms have both the same subject and the

same *logos*, while the heteronymous terms have the same subject but different *logoi*.⁵⁷⁰ The example of “*anabasis*” and “*katabasis*” clearly remind Aristotle’s example of “*anantes*” and “*katantes*” in *Phys.* III.3.

It gets less clear in (3). In the context of the *Topics* passage that Alexander comments on here, Aristotle raises issues about the sophistical arguments concerning whether, e.g., human and white human are the same and whether they have the same attributes. About the subject alone, e.g., human, and the subject taken with its accident, e.g., white human, Alexander says in (3) that they “are not the same simpliciter but in subject, while they are other in *logos*.” Should we understand the claim that they are not the same “simpliciter [*haplōs*]” to indicate a distinction between such cases and the *heterōnuma*? Indeed, it is common to both such cases and the *heterōnuma* that the expressions involved have a common subject but distinct *logoi*. Perhaps we can distinguish the relation between, e.g., “human” and “white human” from the relation between, e.g., “the ascent” and “the descent” by saying that the former pair involves a simple expression and a compound expression while the second pair involves two simple expressions but Aristotle mentions pairs of two compound expressions as examples of what we are calling heteronymous terms in *Phys.* III.3, namely “the road from Athens to Thebes” and “the road from Thebes to Athens,” and “the interval [*diastēma*] of one to two” and “the interval of two to one.” Also, “human” and “white” are simple expressions; they are coextensive in the context we are considering but they have different *logoi*; does this mean that Alexander would classify them as heteronymous terms? As far as I can see, in none of the places Alexander talks about the *heterōnuma*, he clearly mentions accidentally coextensive terms as examples of heteronymous terms and he does not call “human”

⁵⁷⁰ For a similar characterization of the *heterōnuma*, see also Alexander’s commentary on *Met.* Δ.9, 379.20-2. I owe the references to this passage and to T3 to William E. Dooley’s n.114 on p.140 of his translation of Alexander’s commentary on *Met.* Δ in the Ancient Commentators on Aristotle series. Besides these passages, also compare Alexander’s commentary on *Met.* Δ.6, 366.31-3 and his commentary on *Met.* Γ.2, 247.22-4. This last passage is quoted as part of T4 below. Dooley’s mentioned note is on 366.31-3 and Dooley also mentions in the same note this last passage from Alexander’s commentary on *Met.* Γ.2.

The Greek commentators other than Alexander understand *heterōnuma* more broadly to include any two things which are denoted by two different expressions with different *logoi*, e.g., human and horse (see Porphyry’s short commentary on the *Categories*, 69.10-3). See Simplicius’ commentary on the *Categories*, 22.30-3 for Simplicius’ position siding with Alexander against Porphyry on how the term “*heterōnumon*” should be used; Simplicius says that if two *distinct* things have different names according to different *logoi*, they should be simply called other (*hetera*), and *heterōnuma* should be reserved for the case where we have the common subject for different names with different *logoi*, as in the case that “the ascent [*anabasis*] and the descent [*katabasis*] [have] the ladder [*klimax*] [as their common subject].”

and “white human” heteronymous in T3 either. So I tend to think that Alexander would not classify accidentally coextensive terms as heteronymous.

Whether Alexander would do so or not, when I talk about heteronymous terms, I mean only those terms which are *necessarily* coextensive but do not have the same *logos*. Moreover, since we are interested in explaining the relation between “being [*to on*]” and “the one [*to hen*]” as implied by the being-unity equivalence argument, I stipulate on top of these conditions that only the terms which are like this *and* without one being cited as a constitutive part of the definition of the other are heteronymous terms. In other words, if two terms are necessarily coextensive but this is because what one signifies *per se* belongs to what the other signifies, according to either of the initial two senses of the *per se* belonging distinguished in *APo.* I.4 (namely at 73a34-b5), according to my additional conditions, these terms are not heteronymous. So, let’s assume that rational is the differentia of humans and is not the differentia of any other species. “Rational” and “human” are necessarily coextensive, and they do not have the same *logos*, but according to my account of the heteronymous terms, they are not heteronymous because rational *per se* belongs to human according to the first sense of *per se* in *APo.* I.4 because “rational” is cited as a constitutive part of the definition of the humans. Likewise, let’s assume that risible is the proprium of humans and let’s assume that all propria *per se* belong to what they are the *propria* of according to the second sense of the *per se* distinguished in *APo.* I.4. In other words, we assume that risible belongs to all and only to humans and “human” is cited as a constitutive part in the definition of the risible. In this case, again, “human” and “risible” are necessarily coextensive and they do not have the same *logos*, but according to my account of the heteronymous terms, they are not heteronymous. All of Aristotle’s examples from *Phys.* III.3 mentioned above and Alexander’s explicit examples of the terms in the *heterōnuma* cases satisfy my additional conditions; for example, if we consider “the ascent” and “the descent,” one is not cited as a whole as a constitutive part in the definition of the other.

So, whether Aristotle would classify his examples from *Phys.* III.3 mentioned above along with “being” and “the one,” I maintain that the relation between “being [*to on*]” and “the one [*to hen*]” as implied in the being-unity equivalence argument satisfy all the conditions for heteronymous terms as I spelled them out. As Aristotle clearly puts it in T1 (1), “being” and “the one” are coextensive but they do not have the same *logos*. As I argued above, Aristotle must think that

they are *necessarily* coextensive. We do not have a good reason to think that being is the genus or the differentia of the one (or more precisely, that any univocal subsense of being is the genus or the differentia of some univocal subsense of the one), and not the other way around. I argued above that we do not have any positive evidence to think that Aristotle considers the one to be a *per se* attribute of being (or more precisely, that univocal subsenses of unity are *per se* attributes of some univocal subsenses of being). This leaves us with the option that “being” and “the one” are necessarily coextensive without the same *logos* while one does not belong to the other *per se*, i.e., neither is cited as a constitutive part in the definition of the other. So, according to my account of the heteronymous terms, “being” and “the one” are heteronymous terms.

The examples Aristotle gives in *Phys.* III.3 that I call heteronymous involve description of something based on some asymmetrical relations about its parts or limits. So we have a single road between two cities, Athens and Thebes, but we describe it in two ways based on two contrary directions between its limits: as a road from Athens to Thebes and as a road from Thebes to Athens. Likewise, we have a single path or a ladder, as Alexander specifies, and we describe it as an ascending path or a descending path based on two contrary positions or the relative positions with asymmetrical relations (higher and lower) that its limits have, i.e., between the higher and the lower limits. Likewise, we have a single interval (*diastēma*) between one and two and we describe it in two ways based on the asymmetrical relations between its ‘limits’ (i.e., the more and the less). That said, I do not think that we need to limit the logical relation between two terms that I call heteronymous terms to the cases like this where the relevant terms describe something based on the asymmetrical relations between its parts or limits. I think that it is perfectly conceivable that we can have two descriptions of the same thing such that they describe the same thing necessarily without having the same *logos* and without one signifying something that *per se* belongs to what the other signifies, in the two senses of *per se* mentioned above. These two descriptions can refer to their necessarily common subject, describing it from different perspectives or in relation to different things. For example, let’s assume that it is necessarily true that anything that exists has temporal determination and that anything that exists has an active or passive power, i.e., can act or can be acted on. Many philosophers would not accept these two claims, but for the sake of my illustration, I am asking the reader to grant these two claims. In that case, “what has a temporal determination” and “what has a power” would be necessarily coextensive. In fact, the extension of these two expressions

would be everything that exists. These two expressions clearly do not have the same *logos* or meaning; a lay person who understands what the words used in these expressions mean would grant that what has a temporal determination exists at a time but they would not straightforwardly grant that what has a power exists at a time, unless they go and study with a philosopher who holds these views and are persuaded by the truth of these claims. “What has a temporal determination” as a whole is not cited as a constitutive part in the definition of “what has a power” and it is not the other way around either. So, according to my use of the term, these two expressions would be *heteronymous*. “What has a temporal determination” and “what has a power” necessarily refer to the things that exist but they describe different aspects of existing things; one way to put this, using Aristotelian language, is to say that the first expression describes existing things in terms of their determination in the category of when (or maybe in the category of quantity), while the other describes existing things in terms of their determination in the categories of action and passion (*poiein* and *paschein*).

I formulated this example to generate an example that is as general as “*to on*” and “*to hen*,” but more ordinarily, any two *propria* of the same species would satisfy the conditions for the heteronymous terms, as long as we assume that the *propria per se* belong to their species in the second sense of *per se*. If we assume this, it would follow that the *propria* of a species would be necessarily coextensive. For example, let’s assume that being capable of laughing and being capable of gaining knowledge are two *propria* of humans. According to the assumptions mentioned above, it would follow that it is necessarily true that all and only humans are capable of laughing and that all and only humans are capable of gaining knowledge. Although we assumed that a *propria per se* belongs to its species, it does not follow from this that a *propria* of a species *per se* belongs to another *propria* of the same species in either of the two senses of *per se* belonging distinguished above. That is to say, according to our assumption, if we fully spell out the definitions of “capable of laughing” and “capable of gaining knowledge,” we would see that the human species is cited as a constitutive part in the definitions of these two *propria*, but it does not follow that “capable of laughing” would be cited as a constitutive part in the definition of “capable of gaining knowledge” nor the other way around. So, these two *propria* of the humans would be necessarily coextensive, without having the same *logos* and without what is signified by one belonging *per se* to what is signified by the other. So, the expressions for these two *propria* would be heteronymous.

I will explain below that Aristotle thinks that “being [*on*]” and “one [*hen*]” do not signify anything robustly distinct from the natures of the things which are said to *be* (*on*) or are said to be one (*hen*) in the way that a proprium is distinct from the species it is the proprium of. So, being and the one are not simply the propria of the natures of things and I did not want to suggest this. That said, they are somewhat similar to the two propria of the same thing in the sense that they necessarily have that thing as their subject but they ‘say’ different things about it. Since “being” and “one” do not have the same *logos*, they ‘say’ something about a nature that is different from what the other ‘says’ about this nature while they do not signify any additional feature of reality over and above this nature. In short, when I say that Aristotle would likely recognize “being” and “one” to satisfy the conditions that I stipulated for what I called heteronymous terms, I do not mean that this is all there is philosophically interesting to say about “being” and “one” and the logical relation among them, and between them and their subjects.

In suggesting that according to Aristotle’s being-unity equivalence argument “*on*” and “*hen*” are heteronymous terms, I basically follow Alexander’s interpretation of this argument in his *Metaphysics* commentary, especially at 247.8-32. Alexander interprets both the pair “*archē*” and “*aition*” and the pair “being” and “one” as *heterōnuma* because, as he states, these terms have the same subject but they have different *logoi*. Alexander cashes out having distinct *logoi* as having “distinct application of the mind [*allē epibolē tēs dianoias*]:” “for [something is said to be] an *archē* insofar as it is primary to the thing of which it is the *archē* and insofar as the things of which it is the *archē* [come] from it [*ex autou*], while [it is said to be] an *aition* insofar as the thing of which it is the *aition* is on account of it [*di’ auto*], but ‘that from which’ [*to ex hou esti*] is other than ‘that on account of which’ [*to di’ ho*]” (247.11-5). As I explained above, Aristotle does not specify in what way *archē* and *aition* correspond to each other in his discussion of these terms in *Met.* Δ.1-2, Alexander’s proposal that *archē* signifies something in relation to other things (of which it is the principle or the cause) in respect of “that from which” while *aition* signifies the same thing in relation to the same group of other things in respect of “that on account of which” is a reasonable interpretation of how Aristotle would characterize *archē* and *aition* generally. As quoted in T2, at *Met.* Δ.1 1013a18-9 Aristotle generally characterizes *archē* as “the primary thing from which [*hothen*] something is or comes about or is known.” The *Phys.* II.3 version of *Met.* Δ.2 on *aitia* has additional passages at the beginning and at the end of the account. Close to the beginning of *Phys.* II.3, Aristotle says, “... we do not think we know

anything before we grasp ‘on account of what’ about each thing [*to dia ti peri hekaston*], and this means to grasp its primary cause [*tēn protēn aitian*]...” (194b18-20). Also, at the beginning of his review of the four kinds of Aristotelian causes (sc., material, efficient, formal, and final) in *Phys.* II.7, he says, “it is clear that there are causes and that [their kinds] are as many in number as we say; for this many in number are [the kinds of things that] ‘on account of what’ comprehends [*tosauta gar ton arithmon to dia ti perieilēphen*]” (198a14-6).

In his commentary on the beginning of the being-unity argument, after commenting on in what way “*archē*” and “*aition*” have the same subject without having the same *logos*, i.e., without having the same “application of the mind,” Alexander goes on to say that “*on*” and “*hen*” also have a similar relation to each other. They have the same subject,

T4 Alexander of Aphrodisias, *On Aristotle’s Metaphysics*, 247.18-24

κατὰ διάφορον δὲ ἐπίνοιαν τό τε ὄν καὶ τὸ ἐν κατηγοροῦμεν, διὰ μὲν τοῦ ὄν εἰπεῖν τι τὴν ὑπαρξιν σημαίνοντες αὐτοῦ, διὰ δὲ τοῦ ἐν τὸν ἀπὸ τῶν ἄλλων χωρισμὸν καὶ τὸν ἀπὸ τοῦ πλήθους· ἅμα δὲ ὄν τί ἐστι καὶ διαφέρον τῶν ἄλλων καὶ ἔστιν ἐν καὶ οὐ πλῆθος. οὕτως ἔχει πρὸς ἄλληλα καὶ τὸ ἀμερές καὶ τὸ ἐλάχιστον, καὶ σπέρμα καὶ καρπός, καὶ ἀνάβασις καὶ κατὰβασις, καὶ ἀνθ’ ὅσα κυρίως ἑτερόνυμα καλεῖται.

[1] but we predicate ‘*to on*’ and ‘*to hen*’ according to a different concept [*kata diaphoron de epinoian*]; [2] through saying that something *is* [*on*] we signify its existence [*huparxis*], but through [saying that something *is*] one [*hen*] [we signify] its separation [*chōrismon*] from other things and [its separation] from multitude [*apo tou plēthous*]; [3] for it is both something which *is*, and differing [*diapheron*] from other things it is also one and not a multitude. [4] Also the partless [*ameres*] and the smallest [*elachiston*], seed [*sperma*] and corn [*karpos*], the ascent [*anabasis*] and the descent [*katabasis*] and all the things which are called *heterōnuma* in a strict sense [*kuriōs*] relate to each other in this way.

Recall that Alexander says that “*archē*” and “*aition*” have the same subject but not the same *logos*, and he took this to mean that they have a “distinct application of the mind [*allē epibolē tēs dianoias*];” in T4 (1), having a different *logos* is similarly cashed out in terms of having “a different concept [*kata diaphoron de epinoian*].” As I understand these descriptions, Alexander’s

point seems to be that the terms like “*archē*” and “*aition*” or “*on*” and “*hen*” refer to the same thing according to the same feature, i.e., they are not like “the white” and “the human” which refer, say, to Socrates but one insofar as Socrates’s accidental feature, whiteness, is concerned and the other insofar as Socrates’ essential feature, humanity, is concerned; but when “*archē*” and “*aition*” or “*on*” and “*hen*” refer to the same thing according to the same feature, they bring to our attention different aspects of this same thing according to its same feature, or they direct our thought towards this same thing according to its same feature from different perspectives.

Alexander says more on the difference between the “*epinoia*” of “*on*” and that of “*hen*” in T4 (2) and (3). He says that when we say that something *is* (*on*), we highlight its existence (*huparxis*). Alexander does not add more to clarify what is the difference between talking about the being (*einai*) of something and its existence (*huparxis*); so at first sight, it seems that Alexander does not say anything of note to clarify what we say in addition when we say that something *is*. Perhaps, a contrast between *huparxis/hupostasis* and something like *ennoia/epinoia* is implied;⁵⁷¹ in that case, when we say that something *is*, we would be highlighting the fact that it is *real*, emphasizing that we do not mean that it *appears* to be or that we *consider* it to be. Likewise, when we say that something *is* thus and such, we would be highlighting the fact that it *really* is thus and such, emphasizing that we do not mean that it *appears* to be thus and such or that we *consider* it to be thus and such. As I also talk about this below, it seems that Aristotle does not say much to specify what saying “*X on*” adds to merely talking about the nature or the essence of *X*. That said, as I explained above, it seems that al-Fārābī thinks that saying “*X is mawjūd*” in the relevant sense highlights the fact that *X*’s quiddity is *real*, i.e., it is an extramental quiddity and that we do not talk about a quiddity in the mind, i.e., a *mutaṣawwar* quiddity. In other words, neither Aristotle nor al-Fārābī thinks that “*on*” or “*mawjūd*” in the relevant sense describes any feature of reality that is over and above the natures or the essences of things, but it seems that al-Fārābī intimates in addition that “*X mawjūd*” brings to our mind something in addition to what

⁵⁷¹ See, for example, Chapter 1 Section 4 for the late antique Greek accounts of division of theoretical philosophy where natural philosophy, mathematics, and metaphysics are characterized as follows: natural philosophy deals with beings which are not separated from matter, neither in reality (*huparxis/hupostasis*), nor in thought (*epinoia*); mathematics deals with beings which are not separated from matter in reality but only in thought; metaphysics deals with beings which are separated from matter both in reality and in thought. This account seems to be behind al-Fārābī’s characterization of these three theoretical sciences in terms of whether what they study is separate from matter in imagination (*wahm*) or in reality (*wujūd, ḥaqīqa*) in his *On the Aims of Metaphysics* at 35.21-36.9. More on this, see Chapter 1 Section 1.

“X” (or “the quiddity/essence/nature of X”) alone brings to our mind, that is, “X *mawjūd*” draws our attention to the fact that X has an *extramental* quiddity.

Alexander’s characterization of the different *epinoia* that “*hen*” has in T4 (2) and (3) is interesting. Accordingly, when we say that X is one (*hen*), we indicate “its separation [*chōrismon*] from other things and [its separation] from multitude” and it is said to be one and not a multitude as it “differ[s] [*diapheron*] from other things.” This is very suggestive of al-Fārābī’s idea of unity by virtue of circumscription but unfortunately Alexander does not elaborate on this point here or as far as I can see anywhere else in his *Metaphysics* commentary. As I explain below, even though it is not entirely clear what sense of unity Aristotle intends in the being-unity equivalence argument, it seems plausible that he means this sense of unity to be the sense of unity as a measure. So, Alexander’s interpretation of the intended sense of “one” in the being-unity equivalence argument is brief and suggestive of what al-Fārābī thinks to be the sense of unity that should be meant in the being-unity equivalence argument, namely unity by virtue of circumscription by a quiddity, but at the very least it is not clear how Alexander infers this from what Aristotle says.

Finally, as announced above, in T4 (4) Alexander explicitly groups being and the one along with the *heterōnuma* in the technical sense of the word defined by Alexander, e.g., in T3 above from his *Topics* commentary. Apart from one of the classical examples of the *heterōnuma* we find in T3, i.e., “*anabasis*” and “*katabasis*,” Alexander gives some other examples of the *heterōnuma*. It seems that when we keep dividing something, what we get in the end will be called “partless” because it is not divided anymore and it will also be called “the smallest” in comparison with the previous steps in the division. So the same thing is described as “partless” as indicating the fact that the iterative act of division does not continue beyond it, and it is described as “the smallest” when it is compared with the previous steps in the iterative act of division. I am not entirely sure about the connotations of the Greek words “*sperma*” and “*karpos*,” but perhaps the idea is that the grain of, e.g., wheat can be used for two purposes: it can be described as a corn when it is considered to be used as a nutrient and it can be described as a seed when it is considered to be used to grow wheat in the next year. Perhaps the idea is that any grain must pack nutritional value for a new plant to grow out of it, but we can consider it insofar as its nutritional value will be harvested by other living beings (humans in our example) or we can consider it insofar as its

nutritional value will be harvested by the next generation of the plant that will grow using it. In any case, the interesting thing about these examples is that Alexander produces examples of the *heterōnuma* that go beyond the examples we found in *Phys.* III.3 because unlike the examples from *Phys.* III.3, “partless” and “the smallest” do not describe the same thing in terms of a contrariety between its parts or limits or in terms of asymmetrical relations between its parts or limits.

Right after T4, Alexander explicitly contrasts the case of “*on*” and “*hen*” with the *poluōnuma*, just as he contrasts the *poluōnuma* with the *heterōnuma* in T3. So far I follow Alexander. I stipulated that the heteronymous terms are not only coextensive but without the same *logos*, as Alexander explicitly says, but they are also *necessarily* coextensive, and what is signified by one of the terms is not cited as a constitutive part in the definition of what is signified by the other. I suggested above in my discussion of T3 that Alexander might admit that when we talk about the *heterōnuma*, we do not talk about terms that are accidentally coextensive but only about those terms which are necessarily coextensive. In the passages discussed above, Alexander does not address whether the terms involved in the *heterōnuma* can be such that what is signified by one *per se* belongs to what is signified by the other according to the two senses of *per se* belonging stated above. Perhaps Alexander would also grant that “*on*” and “*hen*” are related to each other such that neither *per se* belongs to the other according to these two senses of *per se* belonging. In any case, this is what I defend here and if I diverge from Alexander on this point, so be it.

So, in the being-unity equivalence argument in Γ.2, i.e., T1, I argued so far based on (1) and the relevant considerations from the surrounding passages and elsewhere in the *Metaphysics* that being (*to on*) and the one (*to hen*) are necessarily coextensive with the additional specifications above. As mentioned above, T1 (2) is corrupt and the readings of the alpha tradition and of the beta tradition clearly diverge, but we will see that both readings seem to make the same basic point. The following is the reproduction of T1 (2)-(4) with both the alpha and the beta readings for T2 (2):

T1 (2)-(4) *Met.* Γ.2 1003b26-32

[2-α] [a] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [b] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ ἔστιν [OR ἔστιν] ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος·

[2-β] [a] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὁν ἄνθρωπος καὶ ἄνθρωπος, [b] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστὶν ἄνθρωπος καὶ ἔστιν ἄνθρωπος·

[3] δῆλον δ' ὅτι οὐ χωρίζεται οὐτ' ἐπὶ γενέσεως οὐτ' ἐπὶ φθορᾷ, ὁμοίως δὲ καὶ ἐπὶ τοῦ ἑνός· [4] ὥστε φανερόν ὅτι ἡ πρόσθεσις ἐν τούτοις ταὐτὸ δηλοῖ, καὶ οὐδὲν ἕτερον τὸ ἐν παρὰ τὸ ὄν

[2-α] [a] for *one* human, human *that is* [*ōn anthrōpos*], and human are the same, [b] and it does not denote another thing when it is repeated in speech [*kata tēn lexin epanadiploumenon*], [as in the expressions] “human *is*,” “human,” and “*one* human” [OR “the human is both human and one human”].

[2-β] [a] for *one* human and human are the same, and human *that is* and human [are the same], [b] and it does not denote another thing when it is repeated in speech, [as in the expressions] “human is one” and “human *is*.”

[3] and it is clear that it does not come apart [*chōrizetai*] in generation or corruption and it is also like this in the case of the one; [4] so it is clear that the addition in these cases denotes the same thing, and the one is nothing beyond being.

First of all, in both the alpha and the beta readings, (2.a) makes it clear that *hen* X, *on* X and X are the same in the relevant way. This is supposed to explain the previous claim in T1 (1) that the *hen* and the *on* are the same in some way, and it seems that this explanation turns on the additional information in (2.a). The additional information is that *hen* X is the same as X and *on* X is the same as X too. I discuss what (2.b) means according to both the alpha and the beta reading in Appendix: Γ.2 version of the being-unity equivalence argument, but let us bracket it for now. Aristotle says in (3), without specifying the subject, that “it does not come apart [*chōrizetai*] in generation or corruption;” since Aristotle adds right after this that “it is also like this in the case of the one [*epi tou henos*],” the subject of *chōrizetai* should be without *to hen*. Since Aristotle should be talking about at least two things which do not come apart in generation or corruption, and since neither of these seems to be involve *to hen*, it seems that the subject of *chōrizetai* are X and *on* X. As Aristotle indicated in (2.a) generally that *hen* X is the same as X and *on* X is the same as X, he seems to make the same point again in (3), but this time

specifically in relation to generation and corruption. That is to say, Aristotle seems to claim in (3) that *X* and *on X* are the same in generation and corruption, and “it is also like this in the case of *to hen*,” i.e., that *X* and *hen X* are the same in generation and corruption. It seems that Aristotle affirms the same point in (4) too where he sums up the explanation in (2)-(3): “so [*hōste*] it is clear that [a] the addition in *these cases* [*toutois*] denotes the same thing, [b] and *to hen* is nothing beyond *to on*” (my emphasis). “The addition in *these cases*” in the plural should minimally refer to the addition of *hen* to *X* and the addition of *on* to *X*. In other words, according to (4) which is Aristotle’s conclusion of the account he presented in (2)-(3), Aristotle takes himself to have shown in (2)-(3), minimally, that *X* is the same as *hen X* and that *X* is the same as *on X*. From this, Aristotle takes himself also to have justified what he claimed in (1) and set out to justify in (2)-(4), namely that “*to hen* is nothing beyond *to on*,” i.e., *to on* is the same as *to hen*.

I discuss Uṣṭāth’s Arabic translation of T1 (2)-(3) in detail in Appendix: Γ.2 version of the being-unity equivalence argument. It diverges from the Greek text of T1 (2)-(3) according to both the alpha and the beta readings of T1 (2). It becomes clear in Appendix: Γ.2 version of the being-unity equivalence argument that however we construe Uṣṭāth’s translation of T1 (2)-(3), it conveys more or less the same basic idea conveyed in the Greek text, namely that “human” and “human *that is*” are the same in the relevant way, and “human” and “one human” are the same in the relevant way, so that being and the *one* are the same in the relevant way. Besides, Uṣṭāth’s translation of T1 (4) as we find it in Averroes faithfully renders the Greek text. So even if al-Fārābī read Uṣṭāth’s translation in the form in which it is found in Averroes’ commentary, and even if al-Fārābī could not fully understand Aristotle’s point in T1 (2)-(3) as it is found in Averroes’ commentary, T1 (4) should have helped al-Fārābī to complete his understanding of T1 (2)-(3).

I argued so far based on the first premise in Aristotle’s being-unity argument in Γ.2 (i.e., T1 (1)) and from the context of this argument that *to on* and *to hen* are necessarily coextensive without having exactly the same meaning and one does not *per se* belong to the other according to either of the first two senses of *per se* distinguished in *APo.* I.4 (namely, one is not like a genus or differentia to the other nor is it a *per se* attribute of the other as even and odd are *per se* attributes of number). Moreover, based on the explanation of this premise in the being-unity argument, i.e.,

T1 (2)-(4), I argued that Aristotle claims that in some relevantly strong sense *on* X is the same as X, and *hen* X is the same as X, and based on this, Aristotle seems to explain why *to on* and *to hen* are the same. If Aristotle meant that “*on* X” and “X” happen to pick out the same thing, just as “Socrates” and “white Socrates” do, this would not be enough to justify why *to on* and *to hen* are the same in the sense that they are necessarily coextensive. For example, “Socrates” and “white Socrates” refer to the same thing; likewise “Socrates” and “musical Socrates” refer to the same thing; it does not follow, however, that “white” and “musical” are necessarily coextensive.

So, when Aristotle indicates that *hen* X is the same as X and *on* X is the same as X and the addition of “*hen*” and “*on*” in these cases does not denote anything else, he must be assuming some strong connection between whatever is responsible for our claim “X is one” to be true and the nature or essence of X; likewise, he must be assuming some strong connection between whatever is responsible for our claim “X is” to be true and the nature or essence of X.

When we refer to a human being as “human,” we are referring to her in respect of her nature or essence. If the relevant sense of being said of a human signifies nothing over and above the nature or essence of a human in some relevantly strong sense, it would follow that in a similarly strong sense *ōn anthrōpos* would be the same as *anthrōpos* and the addition of *ōn* would not signify anything else. Likewise, if the relevant sense of the one said of a human signifies nothing over and above the nature or essence of a human in some relevantly strong sense, it would follow that in a similarly strong sense *heis anthrōpos* would be the same as *anthrōpos* and the addition of *heis* would not signify anything else. In short, we are seeking an understanding of “being” applying to a human that applies to her in respect of the essence of a human, and not in respect of some other essence as, e.g., “white” does, and likewise, we are seeking an understanding of “one” applying to a human that applies to her in respect of the essence of a human, and not in respect of some other essence. But since Aristotle clearly says in T1 (1) that being and the one are not denoted by the same *logos*, they cannot describe the human essence in entirely the same way.

In fact, Aristotle indicates in *Met. Z.17* and *H* that the form or the essence of something is that by virtue of which that thing *is* and its form or essence is also that by virtue of which that thing is *one* thing. Given the limitations of space, I cannot discuss Aristotle’s account of substance in

Z.17 and H in sufficient detail,⁵⁷² but his account as it pertains to our current issue of the relevant sense of being and the one applying to each thing can be summarized as follows.

At the beginning of Z.17, Aristotle announces that he makes a fresh start in the investigation of substance (“*palin allēn hoion archēn poiēsamenoi*”) (1041a6-7). Let me outline quickly the investigation of substance presented in Z up to Z.17. In the science of metaphysics to which Aristotle’s work *Metaphysics* is devoted, we investigate the ultimate causes and principles of beings *qua* being. As Aristotle makes it clear in Z.1, since other categories depend on substance, the ultimate causes and principles of substances will also be the ultimate causes and principles of beings *qua* being. We know from E.1 that the ultimate principles or causes we seek must be immaterial substances, but first we should spell out what kind of things are said to be substances and what should be called a substance most properly according to our critically examined set of criteria of substancehood. At the beginning of Z.3, Aristotle states that most commonly four sorts of things are taken to be substances: “the essence [*to ti ēn einai*], the universal, and the genus seem to be a substance of each thing, and the fourth one is the subject [*to hupokeimenon*]” (1028b33-6). In the rest of Z.3, Aristotle argues that the subject or the matter (*hulē*) does not satisfy some accepted criteria of substancehood; he adds that the matter, the form (*eidos*, *morphē*), and what is composed of them seem to be substances. The composite depends on the matter and the form in its being, so the composite should be put aside as a candidate for substance in a strong sense. Aristotle already talked about matter, and he proposes to investigate substance as the form or the essence, focusing on the substances which are most widely accepted, i.e., the perceptible substances. In Z.4-6, Aristotle elaborates on some issues about the form or the essence. Since we are focusing on the perceptible substances whose most common and ordinary instances populate the world around us and are subject to generation and corruption, in Z.7-9, he elaborates on some issues about generation and corruption, including the issues about the role of forms in generation and corruption. Since definition (*horismos*) is the *logos* of the essence, in Z.10-2, he discusses what sort of parts of the thing are the parts of its substance or essence and which parts of the thing are not like this, and which parts of the thing are cited as parts in the definition of this thing, and even though the definition (and the essence it is the *logos* of) has many parts, how the definition (and the essence it is the *logos* of) is one thing

⁵⁷² For an extensive discussion of *Met. H*, see Christian Pfeiffer’s book draft, “Aristotle’s Hylomorphism: The theory of *Metaphysics H*.”

and not simply a heap of many things. So, Z.4-12 can be seen as Aristotle's initial investigation of the essence as the substance of something with a particular focus on the commonly accepted perceptible substances. At the beginning of Z.13, Aristotle reminds the reader of the updated list of the candidates for substance he listed at the beginning of Z.3: "Since our investigation [*skepsis*] is about substance, let us go back again [*palin epanelthōmen*] [to our main investigation from the intervening discussion of the related but side issues about generation and corruption and the definition in Z.7-9 and Z.10-12]. Just as the subject, the essence, and what is composed of these are said to be substance, also the universal [is said to be substance]. We talked about the two (i.e., about the essence, and about the subject..." (1038b1-5). The difference between this list and the list at the beginning of Z.3 is that genus is not mentioned and instead the form-matter composite is mentioned. The form-matter composite is proposed as a candidate for being a substance in Z.3, as I summarized above, and in the following discussion, Aristotle treats the genus along with the universal. In the rest of Z.13 and the following chapters Z.14-6, Aristotle argues that the universal and the genus are not substances and he also argues in Z.16 that no substance has substances as its parts so that the material components of perceptible substances are not substances either: both the ultimate material components like the elements and also the immediate material components like the body parts of a human being. This is because in the actual whole substance, the material components exist only potentially because when, e.g., an actual animal exists as a determinate (*tode ti*) and separate (*chōriston*) thing, its body parts and the ultimate material components do not exist actually as determinate separate things but they only exist potentially. When the animal dies and its body dissolves into its material components, then the material components exist actually but even then these material components are not a substance in a strong sense because they do not exist as one determinate thing but only as a heap (see in particular, Z.16 1040b5-15, 1041a4-5, and this is similar to the briefer account of why matter is not a substance at Z.3 1029a27-8).

This brings us to Z.17. As cited above, at the beginning of Z.17, Aristotle announces to make a fresh start into the investigation of substance; this should not be understood as disregarding the results of the preceding discussion of substance but rather to interpret those results through the lens of the method of causal investigation described in *APo.* II.1-10. As I also briefly talked about this in Chapter 1 Sections 2 and 6, the method of scientific inquiry Aristotle presents in *APo.* II.1-10 can be summarized as follows. A proper scientific investigation concerns whether

and why a property belongs to a subject. Recall that according to Aristotle we scientifically know something only if we know its causes. So, when we scientifically investigate X, we want to grasp the real definition of X which presents the causes of X. For this purpose, we first identify its proper subject, say Y. Then, using the nominal definition of X, we identify the feature whose belonging to the subject is indicated by X, (let's say this feature is Z); then we convert the question of "whether X is" into the question of "whether Z belongs to Y" and we convert the question of "what X is" into the question of "why Z belongs to Y." We first ask *whether* Z belongs to Y; after ascertaining *that* it does (e.g., by perception), we investigate *why* Z belongs to Y. As a result of spelling out the causes which explain why Z belongs to Y, we obtain the real definition of X. For example, we want to gain scientific knowledge of thunder; in other words, we want to provide the real definition of thunder which presents the cause(s) of why thunder exists (as the sort of thing it is). The proper subject of thunder is the clouds because thunder is something that occurs in the clouds. The nominal definition of thunder is noise in the clouds. So our two-place questions are "whether noise belongs to the clouds" and "why noise belongs to the clouds." After we ascertain by perception that noise belongs to the clouds (i.e., it is an observed phenomenon that we hear noise coming from the clouds), we set out to investigate the causes of why noise belongs to the clouds. As a result of this investigation, we discover that there is an extinguishing of fire in the clouds (i.e., lightning) and the relevant noise is produced by this. We can express our discovery of the cause of why thunder exists in a syllogistic form (e.g., noise belongs to the extinguishing of fire; the extinguishing of fire belongs to the clouds; therefore, noise belongs to the clouds) or we can express our discovery of the cause of why thunder exists in a continuous account as the real definition (more precisely, *definiens*) of thunder (noise in the clouds due to the extinguishing of fire).

As summarized in *APo.* II.9-10, this is the procedure we follow when we investigate non-simple things which have a cause other than themselves. As Aristotle explicitly states in *Z.*3 (as summarized above), and in *H.*1 (at 1042a245), in the middle books of the *Metaphysics* under consideration now, our main interest is to analyze what substance is starting from an analysis of familiar and most widely accepted substances, i.e., the perceptible substances, and such perceptible substances are not simple, but rather, they exhibit the sort of internal complexity that allows us to undertake a scientific investigation of them by asking questions about them

identifying the proper subject and then investigating the causes why the relevant feature belongs to this subject.

So, starting from Z.17, Aristotle proposes to apply this method of scientific investigation to the results of the previous discussion about substance to obtain an understanding of what substance is in the case of the non-simple substances under consideration in accordance with his scientific method. This is a promising approach because “substance is a principle and a cause” and it makes sense to look for the substance of X among its causes (1041a9-10). But according to Aristotle, the scientific investigation of the causes of things produces interesting and useful results if we follow the method he lays out in *APo.* II.1-10. Perhaps the most important feature of this method is that we convert one-place questions into two-place questions by identifying the proper subject distinct from the feature the causes of whose belonging to the subject we go on to investigate. So instead of trying to look for the causes of why a human exists, we should identify the proper subject of a human being, say a certain kind of organic body, and we should ask why (*dia ti*) this sort of organic body is human (1041b6-7).⁵⁷³ When we proceed *not* in this way by identifying the proper subject and a distinct feature belonging to it, we do not see a fruitful way forward to discover the relevant causes. If we do not convert our inquiry into an inquiry of why one thing belongs to another thing and instead if we ask why the same thing belongs to itself, e.g., if we ask a question like “why the human is human,” we might give an answer like “it is because nothing is divided from itself,” and this would be some sort of a causal answer, but this answer would be too general and uninformative (1041a16-20).

Since we are interested in knowing more about the substances of the ordinary perceptible substances around us like animals or plants, and since these substance are composed of matter and form, when we seek the causes of why, e.g., the house⁵⁷⁴ exists, we first transform this question into why this group of bricks and stones is a house. The answer will either specify the

⁵⁷³ Although Aristotle does not spell this out in Z.17, we know from his biological and psychological works that he would in fact ask more specific questions, e.g., on account of what (*dia ti*) this sort of organic body is capable of nutrition and reproduction and sensation and imagination and reasoning. And we would further specify what we mean by this sort of organic body (i.e., a more detailed account of human physiology) and we would further specify what is involved in these vital and cognitive powers; each of these steps of further specification would involve discovery of further middle terms, i.e., causes, and in this way, such specifications would actually be results of the scientific investigation into the relevant causes in each step.

⁵⁷⁴ For the point Aristotle wants to make here, it does not matter whether artifacts like a house is a substance or not; even if artifacts are not substances, they provide good examples to illustrate how we should understand the cases with genuine substances composed of form and matter like animals and plants. More on this, see below.

structural organization of this group of bricks and stones which make them a house in relation to the function that a house is supposed to perform (i.e., the formal(+final) cause: e.g., bricks and stones organized in this shape and with this strength so that they can function as a shelter against the elements), or the answer could be the moving, i.e., the efficient cause (the builder *qua* builder, or more precisely the art of building⁵⁷⁵) (1041a26-30, b5-6; see also, H.2 1043a8-9, 14-18). Right after this passage in Z.17 where Aristotle mentions the efficient cause (i.e., 1041a30), Aristotle says, “but this sort of cause is sought in the case of generation and corruption, while the other [i.e., the formal(+final)] in the case of being [*epi tou einai*]” (1041a31-2). Aristotle seems to indicate that the efficient cause is relevant when we explain why something comes about or perishes or comes to have a feature that it did not have before or to cease to have a feature that it had before, but if we are interested in explaining why something *is* the way it is, we would cite its formal(+final) cause. In any case, Aristotle says that that by virtue of which these stones and bricks are house or this sort of body is human, i.e., the form is the substance (1041b5-9). He then goes on to explain on account of what a composite like the flesh composed of fire and earth or the syllable BA composed of the phonemes B and A are such that we do not have a mere heap of fire and earth or the phonemes B and A but we have a whole which is one at 1041b11-33. What makes the whole what it *is* and *one* is not the material components themselves because, e.g. the phonemes B and A together would be a heap or merely a collection of B and A, and the presence of the phonemes themselves cannot explain why they form together something *else* i.e., the syllable which *is* (a syllable) and is genuinely *one*. What makes, e.g., the syllable BA what it *is* and *one* cannot be another thing like a material component in addition to the phonemes B and A because if this additional thing is like a material component, we would need a fourth thing to explain why the phonemes B and A and this additional thing form genuinely *one* thing that *is* what it is, rather than it being the case that the phonemes B and A and this additional thing are like a heap. The thing which makes, e.g., the syllable BA what it *is* and *one* cannot be another thing that is composed of the material components of the whole, i.e., of the phonemes B and A, because in this case we would need a fourth thing to explain what makes the phonemes B and A *one* thing that *is* this third thing. So, what is responsible for making the material components of a composite *one* thing that *is* what it is, rather than a heap of material components, is not another

⁵⁷⁵ See *Phys.* II.3 195b21-5.

material component and it is not composed of the material components.⁵⁷⁶ The lesson Aristotle draws from this reasoning is that “it seems that this is something and is not an element [in the sense of the element as ‘the component as a matter into which [the whole] is divided, like of the syllable [BA], [the phonemes] A and B’ (1041b31-3)], and is at any rate the cause of the fact that *this* [sc., this lump of fire and earth] is flesh and that *that* [sc. that collection of the phoneme B and the phoneme A] is a syllable [*tou einai todi men sarka todi de sullabēn*]; it is similar also in the other cases. And this is the substance of each thing (for this is the primary cause of being [*tou einai*]) but since some entities are not substance and those things are substances which are composed by nature, it seems that this nature is substance, which is not an element [in the sense of a material component] but a principle” (1041b25-31). Recall that the substances we are currently examining are mainly the ordinary perceptible substances which are composite and Aristotle adds here that they are composed by nature; so artifacts are not considered to be substances, and we should read Aristotle’s examples of artifacts to illustrate something about composite substances not as examples of substances but as examples that are analogically like substances.⁵⁷⁷ So it seems that strictly speaking the only composite substances we can perceive are the living beings⁵⁷⁸ because the other natural things we can perceive like the elements and the body parts of the living beings are also not substances as separate and determinate things (as pointed out above, see Z.3 1029a27-8, Z.16 1040b5-15, 1041a4-5). In any case, let’s not worry about the extension of the perceptible composite substances. So even if artifacts and natural material components like the elements, or the homeomerous bodies like the flesh, or the anhomeomerous bodies which are parts of the living things like the hand are not substances, they are useful for analyzing the proper composite perceptible substances like the living beings. So according to Aristotle’s conclusion in Z.17 quoted above, the thing which is the cause of the fact that, e.g., this lump of fire and earth is one thing as flesh and is not a mere heap of elements is the substance of the flesh, which is its “primary cause of being” and the substance of the flesh is the nature of the flesh. As Aristotle argues in *Phys.* II.1 (193a9-b21) that even though both matter

⁵⁷⁶ Also see *Met.* H.3 1043b4-14 for a version of the same argument

⁵⁷⁷ For Aristotle’s claim that artifacts are not substances, see also *Met.* H.3 1043b21-2; also consider H.2 1043a4-5 with the examples discussed before and after.

⁵⁷⁸ In a sense the heavenly bodies would also be counted among the substances composed of form and matter; regardless of whether Aristotle’s considered opinion is that the heavenly bodies are living beings or not, he seems to think that they have matter, although only matter for locomotion (see H.4 1044b3-8 and Λ.2 1069b24-6 for the statement or the implication that the eternal natural substances, i.e., the heavenly bodies have only the matter for locomotion).

and form are said to be nature, the form deserves to be called nature more than the matter. In agreement with this, we will see below that Aristotle makes it clear that the form is the substance of something as actuality while the matter is its substance as potentiality. So insofar as the potential is secondary to the actual (see, e.g., *Met.* Θ.8), the substance of something in the primary sense will be its form.

As explained so far, in Z.17, Aristotle proposes to reevaluate and complement his considerations about substance presented in Z.1-16 through the lens of the *APo* II.1-10 method of the scientific investigation of the causes, and he carries out this reevaluation further in *Met.* H. At the very beginning of *Met.* H., Aristotle says, “indeed from the things mentioned we must draw conclusions [*sullogisasthai dei*] and we should put a finishing touch to [the discussion of substance] by summing up the gist of the matter [*sunagagonas to kephalaion*]” (1042a3-4). As we will see, Aristotle goes through some of the issues he already addressed in the pre-Z.17 discussion of substance and articulates them again, this time using the idea of considering the perceptible substances we are currently interested in as composed of the form as actuality and the matter as potentiality; as we saw, this consideration of such substances is informed by the scientific method from *APo.* II.1-10 according to which we investigate something by analyzing it into one thing’s belonging to its subject and then we seek the causes that explain why it belongs to that subject.

In accordance with this program, in H.1, Aristotle first presents a quick review of Z. In particular, he reminds the reader that the universal and the genus are not substances (1042a21-2) and that we put aside for now the discussion of whether there are non-perceptible substances like the numbers and the Forms as the Platonists and the Pythagoreans say there are (1042a22-4) and focus on the ordinary perceptible substances. When we do that, we observe that these substances are composed of matter and form and all three are said to be substances, namely, the matter, the form, and the form-matter composite (1042a24-31). Although Aristotle does not put it explicitly here, presumably for the reason he presented in Z.3, namely that the composite depends on the form and the matter, and so the composite cannot be a substance in a strong sense, Aristotle does not discuss the composite as a substance here. He presents a brief account of matter as substance towards the end of H.1 at 1042a32-b8 (also further down in H.4-5). Then in H.2, discusses the form as substance. He makes it clear at the beginning that the substance as matter is substance in

potentiality while the substance as form is substance in actuality (H.2 1042b9-11). Right after this, Aristotle starts to discuss the differentiae of things. In fact, as will become clearer in the following summary, Aristotle takes the differentiae to be indicative of the forms of things and the form as substance in actuality is precisely what we expect Aristotle to discuss in H.2 as indicated at the beginning of this chapter.

Aristotle thinks that the differentiae are indicative of the form which is substance as actuality apparently because the *determinate* natures of things by which they are actually what they are are indicated by their differentia. In the H.1 characterization of the three substances, the matter, the form, and the composite, Aristotle says that the matter is potentially determinate (i.e., a *tode ti*) but not actually, and that the form is actually determinate (1042a27-29). Aristotle starts his consideration of why the differentiae are indicative of the being (*to einai*) of things, i.e., their substance as actuality by reporting Democritus' view on the differentiae: Democritus thought that all things share their matter and the determinate natures of things would be indicated by their differentiae. Aristotle proceeds to point out that there are more differentiae than the ones recognized by Democritus and he gives examples of different types of differentiae by which comparable things are distinguished from each other. Aristotle says, if to be D is the differentia of X, to be X (*to X einai*) is to be D. For example, if the differentia of the ice is to be condensed (*pepuknōsthai*) in a certain way, the being (*einai*) for ice is to be condensed in this way and the non-being (*mē einai*) for ice would be not to be condensed in this way (1042b11-3a1). Behind his claim that to be X is to be D where to be D is the differentia of X, Aristotle seems to assume that the differentia of something indicates the *determinate* nature by virtue of which it is (the sort of thing it is).

From the considerations of these differentiae which indicate the being of the things they are the differentiae of, Aristotle concludes, “it is indeed clear from these cases that since substance is the cause for each thing to be [*tou einai hekaston*], in these cases we should seek what is the cause for each of these to be. While none of these [differentiae] is substance, not even if it is coupled [with its substrate] [*oute sunduazomenon*]⁵⁷⁹, nevertheless, [substance is] what is analogous [to these differentiae] in each [of these cases]... In the case of the substances, the actuality itself is what is predicated of the matter” (1043a2-6). Aristotle seems to suggest here that his examples

⁵⁷⁹ I owe this interpretation of what “*sunduazomenon*” means here to Reeve’s translation.

of, e.g., ice do not present examples of substances but we can understand the case with substances strictly speaking by analyzing these examples because what we observe about the differentia and the form on the one hand and the substrate on the other in these cases are analogous to what we have in the case of substances strictly speaking.

So, Aristotle continues with his examples: if we were to define ice, we would define it as “water which have been made solid or condensed in this way;” if we were to define a house, we would define it as “the bricks and woods set up [*keimai*] in this way (or furthermore there is also the final cause [*to hou heneka*] in some cases).” From these examples, Aristotle generalizes that “the actuality and the *logos* of different matters is different... this is why of the people who provide definitions, in saying what a house is, those who say that it is stones, bricks and woods state the house in potentiality while those [who say that] it is a vessel that protects the properties and the bodies, or adding something else of this sort, state the [house] in actuality, while those [who say] both, combining these, [state] the third kind of substance which is [composed] of these” (1043a14-21). Aristotle adds that “for it seems that the *logos* through the differentiae [*ho men dia tōn diaphorōn logos*] is of the form and the actuality [*tou eidous kai tēs energieias*], while the [*logos* that is] out of the components [*ho d’ ek tōn enuparchontōn*] is rather of the matter” (1043a19-21). In short, the substance as potentiality is the matter, and the substance as actuality is the form, and the latter is indicated by the *logos* though the differentiae.

Finally, in H.6, Aristotle directly addresses the question of what makes the definition one thing rather than a heap of many words, but his discussion of this issue allows him to comment on what is responsible for the being and the unity of the composite substances we are examining. As Aristotle puts it at *Met.* H.3 1043b32-4a7, the definition is like a number in that the definition is divided into finitely many parts that are not divided any more, and that just like a number is no longer the same number if a unit is added to it or subtracted from it, a definition is no longer the same definition if a word is added to it or subtracted from it. Just as we should ask why, e.g., three units form one thing, the number three, and not merely a heap of units, we should ask why, e.g., “biped animal [*dipoun zō(i)on*]” is one *logos* and not a mere heap of words “biped” and “animal” (let’s assume that this is the definition of humans, with “animal” being the genus and “biped” the differentia). Aristotle reminds the reader towards the beginning of H.6 that we should ask “what is the cause of its being one” in the case of the definition just as in the case of the

number “for of everything that has many parts and is not such that all of it [*to pan*] is a heap but that the whole is something beyond the parts, there is some cause [of the whole’s being one thing beyond the parts], since also in the case of some bodies, the cause of its being one is grasping [*haphē*], in others sticking [*glischrotēs*] or some other affect of this sort” (1045a7-12). The Iliad is also a *logos* just like a definition, but the Iliad is one “by being bound together [*sundesmō(i)*],” i.e., it is meant to be read or performed together as a continuous narrative, but the definition is one more specifically by being the *logos* of one thing (*tō(i) henos einai*) (1045a12-4).⁵⁸⁰ For example, “biped animal” is one *logos* because it is the *logos* of one thing, i.e., human. This does not answer the question but defers it further: as Aristotle argued in Z.10-1, the parts of the definition are parts of the substance, i.e., the form or the essence of the thing. So, “biped” and “animal” must refer to parts of the substance of the human. What makes the human one thing rather than a heap of biped and animal? Aristotle addresses this question also in Z.12. Briefly put, the solution in Z.12 is that the definition is the formula of one thing because the whole definition is adequately contained in the ultimate differentia, and in this respect, what the ultimate differentia signifies is the form and the substance of the thing (see, in particular 1038a18-26). So, let’s assume that the full definition of a human being is “a substance which is corporeal, living, perceptive, legged [*hupopoun*], and biped [*dipoun*];” according to Aristotle’s account in Z.12, the ultimate differentia, “biped” adequately contains the rest of the definition so that knowing that the human is a biped thing contains all there is relevant to know about what the human is. And the ultimate differentia signifies the form and the substance of the thing.

The answer Aristotle gives in H.6 to the question of why, e.g., the human is not a mere heap of biped and animal but a genuinely one thing is similar to the solution of this aporia in Z.12 but the solution in H.6 is articulated using the analysis of the substances under consideration as composed of the matter as potentiality and the form as actuality (ultimately following the analysis of the object of scientific inquiry into one thing’s being predicate of its subject, according to the scientific method laid out in *APo.* II.1-10). Aristotle says at H.3 1043b30-2, “... the definitional [*horistikos*] *logos* signifies one thing [predicated] of the other, and [in the definition] there must be one thing which is like matter and another thing which is like form [*morphē*]” (also see H.6 1045a33-5). This agrees with Aristotle’s claim in H.2 discussed above

⁵⁸⁰ For a similar contrast between the way that the Iliad is one *logos* and that the definition is one *logos*, also see *Met.* Z.4 1030a7-9, b7-10, *APo.* II.7 92b31-2, *APo.* II.10 93b35-7.

that the differentia seems to indicate the form properly speaking, and if we pursue the traditional classification of the parts of a definition as genus and differentia, it seems that the genus would rather be indicative of the matter.⁵⁸¹ So in a way, the question of why human is not a mere heap of biped and animal would be reformulated as the question of why the form and the matter are composed in a genuinely one thing and the form and the matter are not a mere heap if we give definitions of things according to the method taken from *APo.* II.1-10 by identifying a feature that belongs to the subject and stating why it belongs to the subject. Pursuing this idea, Aristotle says in H.6 (1045a20-35) in his response to the aporia under consideration that this aporia cannot be solved easily if “we proceed in the way that people are wont to produce definitions and speak” but we would easily solve this aporia if we realize that “one thing is matter and the other is form [*morphē*], and one is in potentiality while the other is in actuality.” Aristotle illustrates how the solution of the aporia using this idea of form and matter should proceed with an example of an accidental compound. For the sake of argument, let us assume that the word “cloak [*himation*]” refers to spherical bronze, and that the definition of the cloak is “spherical bronze.” Now we are investigating “what is the cause for the fact that the spherical and the bronze are one.” But since the bronze is the material component and the spherical is the formal component, “what is the cause of this, [namely,] of the fact that what is in potentiality is in actuality, beyond the productive [cause, i.e., the efficient cause], among the things subject to generation? The answer is that nothing else is the cause for the fact that the sphere in potentiality is a sphere in actuality, but this would be the essence for each thing” (1045a30-3). In other words, unless we consider the efficient cause of the generation of the form-matter composite as a cause of the composite’s being genuinely *one* thing that *is* (the sort of thing it is) and not a mere heap of the form and the matter, the only cause of why this matter and this form compose a genuinely single thing and they are not a mere heap is that the form or the essence is the actuality of what is so in potentiality, which is the matter.

As discussed above, at Z.17 1041b11-33, Aristotle argues that the reason why the material components of, e.g., flesh, i.e., the earth and the fire are not a mere heap but form together a distinct thing which is genuinely one, i.e., the flesh, is not another material component or something composed of the material components but the nature of this thing which is its

⁵⁸¹ See also Footnotes n.384 and 392 in Chapter 2 Section 4 more on Aristotle’s association of genus with matter.

substance. We saw in H.2 that the substance of a thing as actuality is its form, and as mentioned above, according to *Phys.* II.1, even though both matter and form are said to be nature, form deserves to be called nature more than matter. The cause of unity we are seeking in H.6 is different but related. Let's assume that we are satisfied with the answer in Z.17 that, e.g., this chunk of fire and earth is flesh because of the nature or the form of the flesh. The following natural question is, what is the cause of unity of this nature and the matter (i.e., the nature of fire and this chunk of fire and earth)? Aristotle's answer in H.6 is that there is no distinct cause of the unity of the form and the matter because there is no distinct cause of what is something in potentiality to be that thing in actuality, unless we consider the efficient cause in the case of the generated things. So the cause of why a composite substance *is* (the sort of thing it is) and is genuinely *one* is that its matter is potentially what its form is actually, unless we also consider the efficient cause of the generation of this thing as the cause of the fact that it *is* (the sort of thing it is) and is one. At the end of H.6 at 1045b17-23, Aristotle summarizes his view by saying, "just as it has been said [above in the chapter], the final matter and the form [*morphē*] are the same and one thing, while one is in potentiality and the other is in actuality so that seeking what is the cause of some one thing [*to zētein tou henos ti aition*] is similar to [seeking what is the cause] of its being one [*tou hen einai*]; for each thing is some one thing [*hen... ti*], and what is in potentiality [i.e., the matter] and what is in actuality [i.e., the form] are in a way one so that there is no other cause unless there is something [which is a cause] as setting it in motion [*hōs kinēsan*, i.e., the efficient cause] from potentiality into actuality. But all the things which do not have matter are simply that which is precisely some one thing [*hoper hen ti*]."⁵⁸²

⁵⁸² The solution of why the definition is one thing and not a heap in Z.12 and H.6 are related. In Z.12, the solution is that the final differentia contains the other differentiae and the genus in the definition of the thing, and the final differentia indicates the form and the essence of the thing. Also, as we saw in H.6, the reason why the definition of the form-matter composite is one is because the form-matter composite is genuinely one thing and the cause for this is its essence. Since the differentia is rather indicative of the form according to H.2, it would follow that the differentia is rather indicative of the cause of the unity of the form-matter composite because the cause of the unity of the composite is its form which is the actuality of what the matter is potentially. It might seem that since the definition as a whole is the *logos* of the essence, and since the definition will contain parts indicating both the formal and the material elements, the essence is not identical to the form. The answer, I think, is that first of all, the matter insofar as it is treated as the matter of the composite is not considered in terms of its own nature but it is considered insofar as it is potentially what the form is actually. This is why Aristotle emphasizes in the summary from the end of H.6 quoted above that "the final matter and the form are the same and one thing." In other words, when we define a house, we would say that it is a shelter, and in order for it to function as a shelter, it must have certain structural features which can be supported only by sturdy material (stones, bricks, wood, etc. but not, e.g., mere sand). In our investigation of what a house is, these sturdy materials would not be considered primarily insofar as they are things with their own 'natures' but insofar as they are capable of providing the features that are necessary for the end result

What Aristotle does in H.6 can be outlined as follows: first, Aristotle spells out the aporia of what is the cause of the unity of the definition (1045a7-20), and then he presents his solution to the aporia, namely that if we put aside the efficient cause of the generation of a composite substance, the reason why it is one thing and not a heap of form and matter is just that the form is the actuality of which the matter is potentially (1045a20-35). These have been reviewed in sufficient detail above. Next comes a parenthetical remark (1045a36-b6), about which I say more shortly. After this, Aristotle returns to the discussion of the aporia about the unity of the form-matter composite and hence its definition which is the main issue of this chapter. At 1045b7-17, Aristotle presents his diagnosis of the reason why some earlier philosophers posited participation (*methexis*) or communion (*sunousia*) or similar relations: according to Aristotle these philosophers posited these relations to resolve the aporia about explaining the unity of the form-matter composite and hence the definition of it but that their solutions are not as simple as Aristotle's solution and their solutions lead to some further complications as Aristotle develops elsewhere.⁵⁸³ Finally, at the end of the chapter (1045b17-23), as quoted above, Aristotle summarizes his solution to this aporia.

In the parenthetical remark at 1045a36-b7, Aristotle argues in a very condensed way that “each of the things which do not have matter... is right away just what is some one thing [*hoper hen ti*], just as it is also just what *is* some thing [*on ti*]” (1045a36-b1). I think that by the things without matter, Aristotle means the forms or the essences of things. According to my understanding, this parenthetical remark relates to the main issue of the chapter, i.e., the unity of the form-matter composite, and hence the unity of its definition, as follows: let's assume that Aristotle showed that the form or the essence is the cause of the fact that the form-matter composite *is* (the sort of thing it is) and is genuinely one thing. This only shows that the unity and the being of the form-matter composite depends on the form, but this does not answer the naturally following question, what is the cause for the form to *be* and for the form to be one? I think that in this parenthetical remark at 1045b36-b7 Aristotle answers this question and indicates that there is no further cause

to perform its function. Similarly, when we defined a knife, we would say it is a cutting device, and in order for it to function as a cutting device, it must have certain shape and structural features which can be supported only by hard materials that can be sharpened (iron, bronze etc. but not, e.g. leather). In this respect, in the revised definitions of Z.17 and H in terms of the form as actuality and the matter as the potentiality, the element of the definition that indicate the form (i.e., the ‘differentia’) will contain the element of the definition that indicate the matter (i.e., the ‘genus’), similar to the account in Z.12.

⁵⁸³ See Chapter 1 Section 2 Footnote n.144 for an example.

for the form or the essence to *be* or for it to be one; in other words, it holds as a brute fact that the form or the essence *is* and is one. One might think that being (*to on*) and the one (*to hen*) are the causes of the unity and the being of the forms; Aristotle's condensed answer is that *to on* and *to hen* are not the causes of the unity and the being of the forms as their genera or as things separate from them. This passage, as I said, has opaque details and I am not going to discuss these details; in particular, it is possible to take Aristotle to talk also about some things other than the forms or the essences when he mentions things without matter. Whether Aristotle also talks about some other things without matter in this passage, there is no doubt that he *does* talk about the essences of things as he says explicitly that "the essence is right away [*euthus*] some one thing [*hen ti*] just as it *is* also some thing [*on ti*]" (1045b3-4). The context leaves no doubt that the "right away [*euthus*]" language indicates that there is no further cause for the essence to *be* and for it to be one but that this is a brute fact, and this is the last point I need for my discussion of the being-unity equivalence argument in $\Gamma.2$.

There are two major takeaways from my discussion of Z.17 and H as it pertains to the question of what are the relevant senses of *on* and *hen* presumed in the being-unity equivalence argument in $\Gamma.2$. First, the substance of X is its form or essence and this is the primary cause of why X *is* and X is *one*. So in this respect, the essence or the form of X is its being and its unity. Second, the essence of X *is* and is *one* directly; there is no further cause for why the essence of X *is* or is *one*; this does not mean that the essence or the form of X always exists. In that case X would also be an eternal thing, but in *Met.* Z and H, as discussed above, Aristotle is mostly interested in perceptible substances which are subject to generation and corruption. The essence or the form of X does not have a further cause of being (and of unity) in the sense that the form of X exists or does not exist without coming into being or without perishing; the form-matter composite comes into being or perishes when the form is present in the matter or when it is no longer present in the matter but the form is not created nor destroyed; only the composite is created or destroyed (see Z.8 1033a28-b19, Z.9 1034b7-19, H.1 1042a30, H.3 1043b14-8, $\Lambda.3$ 1069b35-a4, 15-7, 21-4).

So, we can make very good sense of Aristotle's claims in the being-unity equivalence argument in $\Gamma.2$, more specifically in T1 (1)-(4) discussed so far, if we assume that the relevant senses of being and the one pertaining to anything is the essence of this thing (though described in different ways; I say more on this below). So, *on anthrōpos* is the same as *anthrōpos* in some

strong sense and *hen anthrōpos* is the same as *anthrōpos* in some strong sense and hence *to hen* and *to on* are necessarily coextensive. But they are necessarily coextensive without having exactly the same sense and with neither being a constitutive part of the definition of the other (i.e., one does not *per se* belong to the other) and this is supposed to be captured by the different ways in which *on* and *hen* describe the essence of the thing under consideration.

This way of understanding the relevant *on* and *hen* as describing the essence of the thing (though in different ways) also has the advantage of making very good sense of the other premise in Aristotle's being-unity argument in Γ.2, namely T1 (5), and also explaining how the whole argument is supposed to work. As Aristotle puts the second premise and the conclusion of the whole argument,

T1 (5) *Met.* Γ.2 1003b32-4

[5] ἔτι δ' ἡ ἐκάστου οὐσία ἓν ἐστὶν οὐ κατὰ συμβεβηκός, ὁμοίως δὲ καὶ ὅπερ ὄν τι· [6]
ὥσθ' ὅσαπερ τοῦ ἐνὸς εἶδη, τοσαῦτα καὶ τοῦ ὄντος

[5] moreover the substance of each thing [*hē hekastou ousia*] is one not accidentally, and similarly it is also that which *is* something [*hoper on ti*]. [6] Therefore, there are as many kinds of the one as there are of being.

As can be seen in the full reproduction of the argument as T1 above and the relevant footnote there, Uṣṭath's original Arabic translation of T1 (5) seems to reflect the Greek text faithfully. So, al-Fārābī probably understood from reading the Arabic translation of this text what we understand from reading the Greek text.

As we saw from *Met.* Z.17 and H, the substance of each thing, primarily, is that thing's form or essence. As we saw above, the essence of each thing is directly one and directly *is*. The premise in T1 (5) is meant to further underline that the relevant senses of being and unity under consideration in this argument describe the essences of things. And it almost trivially follows that there are as many kinds of the one as there are of being because the essences of things fall into the ten categories and it would make sense that the relevant senses of being and unity describing the essences of things will also fall into ten subsenses, each describing the essences falling under a category.

Before I move on to discuss the Iota 2 version of the being-equivalence argument, I want to comment briefly on what Aristotle might mean when he says in T1 (1) that being and unity are not denoted by the same *logos*. As I explained above, it emerges from the whole argument that being and the one are necessarily coextensive without being denoted by the same *logos* or having the same meaning and without one being cited as a constitutive part in the definition of the other (i.e., one does not *per se* belong to the other according to either of the first two senses of *per se* distinguished in *APo.* I.4). I also argued that Aristotle seems to have in mind the sense of being and the one describing the essence of each thing in this argument, but if I am right, being and the one must describe the essence of each thing in different ways. As quoted as T4 and discussed above, according to Alexander's interpretation of the way in which being and the one are the same without being denoted by the same *logos*, when we say that something *is*, we highlight its existence (*huparxis*), and I pointed out that what information "*huparxis*" adds to "*einai*" is not clear but I suggested a way to interpret this. On the other hand, according to Alexander, when we say that something is one, we highlight its separation from other things. As also briefly discussed above in Section 3.a, according to the relevant senses of being and unity in al-Fārābī, i.e., by virtue of circumscription by (an extramental) quiddity, when we say that something *is*, we mean that it is circumscribed by its extramental quiddity with the emphasis falling on *extramental*, i.e., that it has an extramental quiddity. When we say that it is one, we mean that it is circumscribed by its (extramental) quiddity, with the emphasis falling on *circumscribed* because its quiddity contains it and separates from other things and in this way, its quiddity 'wraps' it into one whole in separation from other things. It is not clear from Aristotle whether saying that something *is* in the relevant sense adds anything to the claim that it has an essence.

As I briefly explain in the Conclusion Chapter, it seems that according to Aristotle, being undivided is shared by all the senses of unity. Moreover, he seems to hold that all the sense of unity apart from unity *qua* a measure are specifications of being undivided and that even though being undivided in some respect is also necessary for the sense of unity *qua* a measure (because for something to be a measure of the things in a genus, the measure must be undivided in the relevant way or it must be treated as something undivided in the relevant way), the sense of unity *qua* a measure is not merely a specification of being undivided. So it seems that Aristotle thinks that when we say that something is one, according to the sense of unity presumed in the being-unity equivalence argument in Γ.2 discussed so far, we mean either that it is not actually divided

in some way because of its essence (maybe more specifically, that it is not actually divided into its material components or into its matter and its form, and its form or essence is the cause of this lack of division), or we mean that it is an instance of its kind, some *one* thing displaying that nature, so that it can be treated generally as a measure of other things in its kind by virtue of its form or essence.⁵⁸⁴ I explain in the following subsection that even though it is not entirely clear which sense of unity Aristotle means to be presumed in the being-unity equivalence argument, it is plausible that he understood this sense of unity to be unity *qua* a measure of the things in its kind by virtue of its essence, in the way that the human kind, or a human being insofar as he is taken not as a particular determinate human being but as *a* human being (an instance of the human kind), is the measure of all the individual humans so that we can say that, e.g., Socrates, Plato, and Aristotle are measured as three humans.

More importantly for al-Fārābī's interpretation of the senses of being and unity presumed in the being-unity equivalence argument in Aristotle, as explained in the following subsection, it appears from a natural reading of Iota 2 that in Iota 2 Aristotle identifies the sense of unity presumed in the being-unity equivalence argument as the sense of unity *qua* the measure of a genus according to a different understanding of measure (in the way that, e.g., the phonemes are the measures of the articulate sounds so that "banana" is measured as six phonemes), and this makes it very difficult to see how the sense of unity *qua* the measure of a genus according to this second understanding of measure can work as the sense of unity presumed in the being-unity equivalence argument. I suggest that this difficulty prompted al-Fārābī to develop his senses of unity and being by virtue of circumscription by (an extramental) quiddity starting from the interpretation of Aristotle presented above that the senses of being and unity presumed in the being-unity argument describe the essence of each thing (but in different ways).

⁵⁸⁴ It is worth adding that even if *to hen* is a *per se* attribute of *to on*, contrary to what I suggest, everything else I say above would be unaffected by this. Even if *to hen* is a *per se* attribute of *to on*, they would still be necessarily coextensive (just like any single proprium of a kind would be necessarily coextensive with this kind, on the assumption that the propria *per se* belong to their kinds; e.g., risible and human); they would still be denoted by different *logoi* (*to on* would be cited as a constitutive part in the definition of *to hen* but not the other way around so that they would be denoted by different *logoi*). Perhaps according to this view the relevant sense of being would simply be the essence of the thing while the relevant sense of unity would be a certain description of the essence (i.e., the thing is not divided because of its essence or it can be treated as a measure because of its essence) and perhaps this would be the way to understand the claim that according to their relevant senses *to hen* is a *per se* attribute of *to on*.

c. Iota 2 version of the being-unity equivalence argument (1054a13-9)

The Iota 2 version of the being-unity equivalence argument is presented at the very end of this chapter (1054a13-9). It is hard to fully appreciate this argument without the preceding discussion in this chapter which builds up to it. Aristotle starts the chapter by clearly referring back to the eleventh aporia in *Met. B*.⁵⁸⁵ In the eleventh aporia,⁵⁸⁶ Aristotle presents the opposing positions on the question of whether *to on* and *to hen* are substances. The question is

T5 *Met. B*.4 1001a5-8

πότερόν ποτε τὸ ὄν καὶ τὸ ἐν οὐσίαι τῶν ὄντων εἰσί, καὶ ἐκάτερον αὐτῶν οὐχ ἕτερόν τι ὄν τὸ μὲν ἐν τὸ δὲ ὄν ἐστίν, ἢ δεῖ ζητεῖν τί ποτ' ἐστὶ τὸ ὄν καὶ τὸ ἐν ὡς ὑποκειμένης ἄλλης φύσεως.⁵⁸⁷

... whether [1] being [*to on*] and the one [*to hen*] are indeed substances of beings and without being something else [*ouch heteron ti on*], [the one] is one and [being] is [*to men hen to de on estin*], or [2] we must seek what indeed is being and the one on the assumption that there is another nature underlying [being and the one].

To see more clearly what is at stake in each of these positions, it is useful to bear in mind that we can use “*to on*” and “*to hen*” generally or specifically in the way that we can generally call what is hot “*to thermon*” and we can also specifically call what is *preeminently* hot “*to thermon*.” As Aristotle puts it in *Met. α.1*, of the things which have the same predicate (“*to sunōnumon*”), we can distinguish that which exhibits this predicate in the strongest way from the others; what is *thermon* generally has the feature of being hot, but what is *preeminently thermon* is *thermon* to the greatest degree, i.e., it is the “hottest [*thermotaton*],” and this means minimally that it is the cause of hotness (*thermotēs*) in the other hot things and it is implied that its hotness is not caused by something else. As Aristotle adds, we can talk about the true (*alēthes*) and being (*einai*) in a similar way: what is the cause of truth to all the other true things is true to the greatest degree

⁵⁸⁵ The “*en tois diaporēmasin*” at 1053b10 is a clear reference back to *Met. B*.

⁵⁸⁶ See B.1 996a4-9 for the initial statement of the aporia. The longer account is at B.4 1001a4-b25. There is no close Kappa version of this aporia but compare K.2 1060a36-b12.

⁵⁸⁷ In Uṣṭāth’s translation, *Long Commentary*, 260.14-1.1:

... هل الهوية والواحد جواهر الهويات وكل واحد منهما ليس ينسب إلى شيء آخر بل أحدهما هوية والآخر واحد أم ينبغي أن نطلب ما الهوية وما الواحد طلبا كان طبيعة أخرى موضوعة لهما.

(*alēthesteron*) and “however each thing stands with respect to being [*einai*], in the same way it also stands with respect to truth” (993b24-31). So, we can use “*to on*” to refer to something which is *on*, i.e., anything that *is*, and we can also use “*to on*” to refer to something which is preeminently *on* in the sense specified above, i.e., that it is *on* to the greatest degree and this minimally means that it is the cause of *einai* for any other thing which is *on* (if such other things exist, i.e., if strong monism is not correct). Similarly, we can use “*to hen*” to refer to something which is *hen*, i.e., anything that is *one*, and we can also use “*to hen*” to refer to something which is preeminently *hen* in the sense that it is *hen* to the greatest degree with this minimally meaning that it is the cause for any other thing that is one to be one (if such other things exist). The eleventh aporia primarily addresses “*to on*” and “*to hen*” in this latter, specific sense.

With this being addressed, we are in a better position to spell out both sides of the aporia. According to the first side, *to on* is *on* “without being something else [*ouch heteron ti on*]” and *to hen* is *hen* without being something else. When Aristotle says that the X *is* or the X is X “without being something else,” he means that what is said to be X is something whose essence is to be X and not something else. Aristotle makes this clear in his account of the third sense of *per se* (and the opposite sense of *per accidens*) in *APo.* I.4:

T6 *APo.* I.4 73b5-10⁵⁸⁸

ἔτι ὁ μὴ καθ’ ὑποκειμένου λέγεται ἄλλου τινός, οἷον τὸ βαδίζον ἕτερόν τι ὄν βαδίζον ἐστὶ καὶ τὸ λευκόν,⁵⁸⁹ ἢ δ’ οὐσία, καὶ ὅσα τόδε τι σημαίνει, οὐχ ἕτερόν τι ὄντα ἐστὶν ὅπερ ἐστίν. τὰ μὲν δὴ μὴ καθ’ ὑποκειμένου καθ’ αὐτὰ λέγω, τὰ δὲ καθ’ ὑποκειμένου συμβεβηκότα.

Moreover, that which is not said of something else as a subject [is said to be *per se*]; e.g., the walking thing [*to badizon*], being something else [*heteron ti on*], is a walking thing [*badizon*]; also the white thing [*to leukon*] [is like this]. By contrast, a substance and those which signify a this something [*tode ti*] are exactly what they are [*hoper esti*]

⁵⁸⁸ The relevance of this passage and the following passage (*Met.* N.1 1087a29-b4) in this context was first brought to my attention by Stephen Menn. I noticed the relevance of the following two *Met.* A passages for this issue in a Greek reading group led by Stephen Menn.

⁵⁸⁹ Ross adds “λευκόν” after “τὸ λευκόν” but I think this addition is unnecessary.

without being something else [*ouch heteron ti onta*]. So I say that things which are not [said] of a subject are *per se*, while those which are [said] of a subject are accidents.

So, the walking thing (say Socrates) is said to be walking by “being something else,” i.e., the essence of the walking thing (here, Socrates) is not to be walking but to be human and walking is attributed to this thing whose nature is other than to be walking. In this respect, walking is said of something else as a subject; so, it is not *per se* according to the sense of *per se* distinguished in T6 but it is an accident. By contrast, the human (say, again, Socrates) is said to be human “without being something else,” i.e., the essence of the thing which is said to be human is nothing other than to be human. In this respect, human is not said of something else as a subject, and so it is *per se* according to this sense of *per se*. In a similar sense, the claim that the X *is*, or the X is X by being something else can indicate that X subsists in something else and hence it depends on it for its being. For example, in his argument at N.1 1087a29-b4 against the view that the principles are contraries, Aristotle says that “if there cannot be anything that is prior to the principle of everything, it would be impossible that the principle is a principle by being something else [*heteron ti ousan*];” white (*to leukon*) cannot be a principle because “it is [said] of a subject and it is white by being something else [*heteron ti on*]; for that [subject] will be prior [to white],” but a principle is not posterior to the things it is the principle of. Likewise, contraries must have a common subject and if, e.g., someone says that the hot and the cold are the principles, the common subject which is said to be hot and cold in turn is what “the hot” and “the cold” refer to, and the essence of this subject is not to be hot or to be cold but something else (because if its essence was to be hot, it cannot be cold in any way). In that case, the subject is prior to hot and cold because to be hot (or cold) depends on the subject for which to be what it is is not to be hot (or cold) but (say) to be extended in three dimensions. Also along these lines, in his review of the views of the Pythagoreans and Plato on the ultimate principles in *Met.* A.5 and 6, Aristotle says that the Pythagoreans “thought that the limited [*to peperasmemon*] and the unlimited [*to apeiron*] are not some other natures [*ouch heteras tinas... phuseis*], like fire or earth or something else of this sort, but the unlimited itself and the one itself are the substances of these things of which they are predicated” (*Met.* A.5 987a15-9), and that according to Plato, the one and the indefinite dyad (*to mega* and *to mikron*) are the two ultimate principles and in particular “[Plato] claimed in a way that is very similar to the Pythagoreans that the one, at any

rate, is a substance, and is said to be one not by being something else [*mē heteron ti on*]” (*Met.* A.6 987b22-4).

So, according to the first side in the eleventh aporia, *to on* is *on* without being something else and *to hen* is *hen* without being something else; in other words, the nature or essence of what is said to be *on* in the relevant sense (i.e., what is preeminently *on* such that it is the cause of being for other things) is not to be something else but precisely *to be*, and the nature or essence of what is said to be *hen* in the relevant sense (i.e., what is preeminently *hen* such that it is the cause of unity for other things) is not to be something else but precisely *to be one*. This is also how Aristotle spells out this position in his discussion in *Met.* B.4 following T5. He says at 1001a9-12 that Plato and the Pythagoreans hold the first position in this aporia as they think that “neither *to on* nor *to hen* exists by being something else, but rather, this is their nature, on the assumption that the substance of it is to be one and to *be* [*tou heni einai kai onti*].”

According to T5, the second side in this aporia by contrast hold that “we must seek what indeed is *to on* and *to hen* on the assumption that there is another nature underlying [them].” In the following discussion, Aristotle identifies the natural philosophers (*hoi peri phuseōs*) as holding this view:

T7 *Met.* B.4 1001a12-9

οἱ δὲ περὶ φύσεως, οἷον Ἐμπεδοκλῆς ὡς εἰς γνωριμώτερον ἀνάγων λέγει ὅτι τὸ ἓν ἐστίν· δόξειε γὰρ ἂν λέγειν τι τοιοῦτο τὴν φιλίαν εἶναι (αἰτία γοῦν ἐστὶν αὕτη τοῦ ἓν εἶναι πᾶσιν), ἕτεροι δὲ πῦρ, οἱ δ’ ἀέρα φασὶν εἶναι τὸ ἓν τοῦτο καὶ τὸ ὄν, ἐξ οὗ τὰ ὄντα εἶναι τε καὶ γεγενῆσθαι. ὥς δ’ αὐτως καὶ οἱ πλείω τὰ στοιχεῖα τιθέμενοι· ἀνάγκη γὰρ καὶ τούτοις τοσαῦτα λέγειν τὸ ἓν καὶ τὸ ὄν ὅσας περ ἀρχὰς εἶναι φασιν.⁵⁹⁰

On the other hand, the natural philosophers [hold the second position]. For example, Empedocles states whatever the one is on the assumption that he is leading it back to

⁵⁹⁰ Ustāth’s translation, *Long Commentary*, 261.4-11:

وأما أصحاب العلم الطبيعي مثل ابن دقليس فإنه نسب الواحد إلى شيء آخر أوضح ويزعم أن الواحد هو الهوية وخلق أن يقول إن هذا الواحد هو المحبة فإنه زعم أن المحبة هي علة أن تكون جميع الأشياء واحدة وآخرون زعموا أن هذا الواحد والهوية هما نار وزعم غيرهم أنه هواء ومنه تكونت وتولدت الهويات وكذلك زعم الذين قالوا إن الأسطوانات كثيرة فإن هؤلاء يضطرون أن يقولوا إن الواحد والهوية أشياء كثيرة على عدد الأوائل التي يقولون إنها. Bouyges prints the last word as إنها but إنها without a predicate should be grammatically impermissible. As Bouyges records in his apparatus, in the ms. بها was corrected into إنها. In any case, most probably Ustāth’s original translation read بها here.

something more familiar; for he seems to claim that love [*tēn philian*] is something of this sort (at the very least, [he thinks that] [love] is the cause for all things to be one [*aitia... tou hen einai pasin*]). Others think [*phasin*] that this one and being [*to hen touto kai to on*] from which the beings are and have come about is fire, while another group say that it is air. Also the [thinkers] who posit more elements [think] in the same way, for it is necessary also for them to claim that the one and being [*to hen kai to on*] are precisely whatever principles they think there are.

As we saw, the two sides in this aporia are divided on the question of whether *to on* (i.e., the thing which *is* and is the cause for the other things which *are to be*) and *to hen* (i.e., the thing which is one and is the cause for the other things which are one to be one) are *on* and *hen* without being something else, i.e., that the nature or essence of *to on* is precisely this, to *be*, and the nature or essence of *to hen* is precisely this, to be one. The first group, identified as Plato and the Pythagoreans, answer this question affirmatively, while the second group, identified as the natural philosophers, answer this question negatively. The natural philosophers think that what is responsible for other things to *be* or to be one does not have the nature or the essence of *being* or of being one, but rather, it or they have some other “more familiar” nature or essence. So, Aristotle infers that for Empedocles the one is love because Empedocles thinks that love is the cause for everything to be one. Other natural philosophers think that “this one and being [*to hen touto kai to on*],” i.e., *to on* and *to hen* in the relevant sense of what is preeminently *on* or *hen*, is air, or fire or whatever elements they posit as their principles because they must admit that being and the one in the relevant sense is or are what is responsible for the being and the unity of everything, i.e., those things “from which the beings are and have come about.”

In his account of both sides of the aporia, Aristotle does not always clearly distinguish *to on* and *to hen* in the relevant sense from each other but this is justified because for many philosophers, a particular being’s coming *to be* and persisting *in being* mutually implies its coming *to be one* and persisting *in being one*; so, in some relevant respects, whatever is responsible for its coming *to be* and persisting *in being* will also be responsible for its coming *to be one* and persisting *in being one*. I try to make more precise remarks about how we should understand one thing’s causing another thing’s being or its unity below, but what I said so far should suffice as an initial explanation of the eleventh aporia.

At the beginning of Iota 2, at 1053b9-16, Aristotle closely paraphrases these two positions in the eleventh aporia. Then, at 1053b16-24, he presents his solution to the aporia, basically rejecting the first position, i.e., that the one (and being) is a substance, i.e., the one is something whose nature or essence is precisely to be one, and by implication he sides with the second position, i.e., that the one (and being) is something whose nature or essence is not to be one but it is something else (something “more familiar”). Aristotle’s argument has two steps. The main step rests on his argument in Z.13-6 that the universals (*katholou*) and the genera (*genē*) are not substances:⁵⁹¹ as he puts it in Iota 2, “... [the universal] itself is not a substance since it is not possible for there to be some one thing over and above many things [*hen ti para ta polla*] (for it would be common [*koinon*]) except for a predicate [*katēgorēma*] only;” (1053b18-20) and a predicate is not self-subsisting because it subsists in its subject. Accordingly, if universals are not substances, *to on* and *to hen* cannot also be substances because “*to on* and *to hen* are most universally predicated of all.”⁵⁹² It might seem that Aristotle conflates the general and special use of *on* and *hen* as I described above. The question we are still pursuing from the eleventh aporia is whether that which is *hen* (or *on*) and is the cause for the other things to be *hen* (or *on*) is self-subsisting or not but it seems that here Aristotle treats *on* and *hen* in their general sense according to which everything is said to *be* (*on*) and to be one (*hen*) regardless of whether it is the cause of *being* or being one to other things or not. However, if pressed, Aristotle would probably provide a reasoning like this: without loss of generality, let’s focus on *to hen* in the special sense and let’s call this the One, with a capital “o.” According to Plato and the Pythagoreans, the One is self-subsisting; the One refers to that thing which is one and whose essence is precisely to be one, not something else. Each of the other things are also one, this time with a lower-case “o,” meaning

⁵⁹¹ As mentioned above in my review of *Met. Z* and *H*, this result is also asserted in the summary of *Z* presented at the beginning of *H*, namely, at *H*.1 1042a21-2.

⁵⁹² Two of the reasons presented in *Z*.13 against the view that universals are substances seem particularly relevant here. First, it is argued at 1038b9-15 that universals are not substances on the basis of the principle that *X* and *Y* are distinct just in case the substance of *X* and the substance of *Y* are distinct; so if the universal shared by two distinct particulars is their substance, these distinct particulars must be the same; so the universal *must* be the universal of a single particular but by definition the universal is said of many things (see, e.g., *DI* 7 17a38-40) (whether it is *actually* said of many things or whether all we need is that it *can* be said of many thing even when it is actually not said of many things does not make a difference because it follows from our assumption that the universal is a substance of something that the universal *must* be the universal of that single thing). Second, it is argued at 1038b15-6 that a substance is not said of a subject but the universal is said of a subject, in fact, of many things (actually or potentially). It seems that in the condensed argument against the view that *to on* and *to hen* are substances of things in Iota 2 under consideration, both of these reasons are invoked. Aristotle argues against the view that *to on* and *to hen* are substances of things at *Z*.16 1040b16-27 too; in this argument, he explicitly applies the first reason.

that they exhibit ‘unity’ in some relevant sense. How is the One cause of unity for these other things each of which is one? They are one by participating (*methexis*) in the One, or by means of some such causal relation something which is one relates to the One and as a result it becomes one or remains to be one. As long as this relation entails that the One is shared by many things, it would be “some one thing over and above many things,” and as quoted right above, such a thing which is common (*koinon*) to many things cannot exist except as a predicate and a predicate is not self-subsisting.

This is the main step in Aristotle’s argument against the view that *to on* and *to hen* are self-subsisting. He adds that even if we grant that genera are substances, *to on* and *to hen* would not be substances because they are not genera⁵⁹³ (1053b22-4⁵⁹⁴).

So, according to Aristotle’s main argument, the universals and the genera in particular are not “some natures and substances which are separate from other things” (1053b21-2) because nothing universally predicated is like that, and so are not *to hen* and *to on*, i.e., that which is one and is the cause for the other things to be one and that which *is* and is the cause for the other things to *be*. Instead, *to hen* is something whose nature is different from just being one and *to on* is similarly something whose nature is different from just *being*. So, along with the natural philosophers, when we are seeking what is *to hen* and *to on*, we should seek the nature that

⁵⁹³ Aristotle indicates that being and the one are not genera in other places too: see, *Met.* H.6 1045b5-6 (also compare b2-3), and see *APo.* II.7 92b13-4 for being only (“but being [*to einai*] is not the substance of anything, for being [*to on*] is not a genus”). Aristotle provides arguments for the claim that *to on* and *to hen* are not genera turning on the fact that *on* and *hen* are the most general predicates at *Met.* B.3 998b23-7 (and the shorter Kappa version at K.1 1059b31-4). This argument is condensed. It seems that at least in part this argument uses the principle that the genus is not predicated of its differentia; for an explanation of this principle, see *Top.* VI.6 144a31-b3 (also compare *Top.* IV.2 122b18-24). Castelli, *Problems and Paradigms of Unity*, 55 n.11 brought to my attention that Aristotle presents a different argument for the view that being and the one are not genera at *Top.* IV.6 127a26-34 (in the same footnote, Castelli also cites *Top.* IV.1 121a10-9, but this is an argument against there being genera of *to on* and *to hen*; it is possible that *to on* or *to hen* does not have a genus because it is the highest genus).

As I mentioned above, these arguments turn on *to on* and *to hen* being the most general predicates, but even if they were not the most general predicates, they would still not be genera, strictly speaking, because a genus is said univocally while *to on* and *to hen* are said by focal equivocity.

⁵⁹⁴ It appears that Aristotle implies at the end of this passage that substance (*ousia*) is also not a genus (Reeve’s translation of the whole clause: “... nor –due to the same causes as in the case of being and substance– can the one be a genus.” Ross’ translation: “... and on the other hand, the one cannot be a class, for the same reasons for which being and substance cannot be classes”). That said, I do not see why Aristotle would say that substance, i.e., the category of substance, is not a genus. As a category, it must be a genus, in fact, the highest genus (also, that substance is a genus is explicitly affirmed at *Phys.* I.6 189a14). One way out is to assume that “*ousia*” at 24 is used as an apposition to “*on*” (see Chapter I Appendix: Ontology in *Met.* Γ.1-2 and *Met.* Δ and especially Footnote n.304 on the use of “*ousia*” to mean being generally, including the things outside the category of substance). Alternatively, we can perhaps read the whole clause as follows: “and *to hen* cannot be a genus for the same reasons for which *to on* is not [a genus] either, nor [can it, i.e., *to hen*, be] a substance.”

“underlies [*hupokeitai*]” *hen* and *on* and in this way we would state *to hen* and *to on* “in a more familiar way [*gnōrimōterōs*]” (1053b13-4). Next, Aristotle proposes to apply this understanding of *to hen* to more particular cases using his idea that *to hen* (and *to on*) are said in many ways following the categories and using the sense of unity *qua* the first measure of a genus (shortly, one *qua* unit) that he discusses in detail above at Iota 1 1052b18-3b8.⁵⁹⁵ He says,

T8 *Met.* Iota 2 1053b24-8

ἔτι δ' ὁμοίως ἐπὶ πάντων ἀναγκαῖον ἔχειν· λέγεται δ' ἰσαχῶς τὸ ὄν καὶ τὸ ἓν· ὥστ'
ἐπεὶ περ ἐν τοῖς ποιοῖς ἐστὶ τι τὸ ἓν καὶ τις φύσις, ὁμοίως δὲ καὶ ἐν τοῖς ποσοῖς, δῆλον ὅτι
καὶ ὅλως ζητητέον τί τὸ ἓν, ὥσπερ καὶ τί τὸ ὄν, ὡς οὐχ ἰκανὸν ὅτι τοῦτο αὐτὸ ἡ φύσις
αὐτοῦ.⁵⁹⁶

Furthermore, it must be similar in every case, but being [*to on*] and the one [*to hen*] are said in the same number of ways. So, since in the qualities the one is something and some nature and similarly also in the quantities, it is clear that also generally [*holōs*] we should seek what the one is, just like what being is, as it is not adequate [to say] that this itself [i.e., *hen* or *on*] is its nature.

For ease of discussion, in my following interpretation of Aristotle's passages, when I want to emphasize that I talk about *to hen* and *to on* in the special sense, I will keep calling them “the One” and “Being” starting with upper-case letters. Aristotle starts by saying that what we argued so far, i.e., that the One and Being are not substances but they refer to some underlying thing whose nature is other than just to be one or just to *be*, must apply “in every case [*epi pantōn*].” It is specified in the following what these cases are: *to on* and *to hen* are said in an equal number of ways. It is implied in the following sentence that each of these ways is associated with a

⁵⁹⁵ For my purpose here, it is not important whether the primary sense of unity for Aristotle is to be one *qua* undivided or to be one *qua* the first measure of a genus; it is also not important for my purpose how we should understand the *primacy* of whatever is the primary sense of unity in relation to the other senses of unity. As we will see, the sense of unity that is explicitly discussed in Iota 2 right before the Iota 2 version of the being-unity equivalence argument is clearly the sense of unity *qua* the first measure of a genus according to a particular understanding of the measure; this is all I need for the point I am making here.

⁵⁹⁶ Uṣṭāth's translation (1269.5-6, 1272.9-12) (the first clause is the last sentence of Textus 6 and the rest is from Textus 7 in Bouyges' edition)

وأيضاً مضطر أن تكون جميع الأشياء مثل ذلك والهوية تقال بأنواع مساوية لأنواع الواحد فإذا كان الواحد في الكيفيات وهو طبع ما فكان ذلك [كذلك؟]
في الكميات أيضاً فيبين أنه ينبغي بنوع كلي أن يطلب ما الواحد كالهوية أيضاً إذ ليس في معرفة طلبه [طبعه؟] أنه هو هذا كفاية.

Bouyges suggests that in Uṣṭāth original, the طلبه towards the end might have been طبعه and I would add that the underlined ذلك might have been كذلك in Uṣṭāth's original.

category. So, Aristotle implies that since “*on*” and “*hen*” are not univocal predicates, we cannot look for a single principle of unity for everything in every category, i.e., a single One, and a single principle of being for everything in every category, i.e., a single Being.⁵⁹⁷ Instead, in each category, we should seek the One (or a finite number of Ones) that is the cause of unity for the other things in that category, and Being (or a finite number of Beings) that is the cause of being for the things in that category. In each category, we will have one thing or a finite number of things which are responsible for the unity of the other things in this category but their nature is other than simply being one. After T8, at 1053b27-4a Aristotle provides concrete examples to illustrate such Ones in various genera: if all beings were colors, the white (*to leukon*) would be *to hen* and the beings would be a number of it; if all beings were tunes (*melē*), *to hen* would be a quarter-tone (*diesis*) and the beings would be a number of the quarter-tones; if all beings were sounds (*phthoggoi*), they would be a number of the phonemes (*stoicheia*) and *to hen* would be a vowel (*stoicheion phōnēen*); finally, if all beings were rectilinear figures (*schēmata euthugramma*), *to hen* would be the triangle, and the beings would be a number of the triangle. Aristotle does not say here that the mentioned One is the measure of the relative genus, but two of the examples here are also given as examples of the one *qua* the first measure of a genus in Aristotle’s discussion of this sense of unity in the preceding chapter, namely at Iota 1 1052b18-3b8. To be more precise, in Iota 1, Aristotle indicates that the quarter-tone is one as the measure

⁵⁹⁷ Of course, Aristotle thinks that the accidental categories depend on the category of substance, and the highest cause or principle of the substances will in this way also be the highest cause or principle of all the beings, but we cannot find a single principle for the unity or the being of everything that exists across the categories directly; we should first investigate the principles in the particular ‘realms’ within each category and then we can see the causal dependence relations among them and then across the categories. After all, the ultimate moving principle of substances, and hence indirectly of all beings, is the first unmoved mover, but the first unmoved mover is far from being enough to explain all the scientifically interesting things to explain among the substances let alone beings in the other categories; scientific investigation of beings cannot short-circuit the ‘local’ principles of beings. It seems that Aristotle expresses a similar sentiment when he says, “in general [when we] seek the elements [*stoicheia*] of beings, if we do not divide [the beings], as they are said in many ways, it would not be possible for us to find [such elements], especially if we seek [these elements] in the way in which they are the elements from which [beings] are [*ex hoiōn esti stoicheiōn*]. For from what are acting, being acted on, or the straight? Presumably, it is not possible grasp them, but if any, it would be possible [to grasp such elements] of the substances alone. So it is not correct to seek the elements of all the beings and to think that one got them” (*Met.* A.9 992b18-24). Also see *Met.* A.4: there are no principles and elements of all beings (1070a33-b10); rather, each genus has its own principles. But if we want to talk about principles of all things, we can do so by analogy (e.g., saying that all things have principles as a form and privation, and as a direct (*prōton*) subject, and as a direct (*prōton*) moving (i.e., efficient) cause, but these will be different for different genera) (1070b10-35, also see *Met.* A.5 1071a3-29). And as already mentioned, in a way, things in the other categories depend on substances and the ultimate causes of substances will indirectly be causes of everything (*Met.* A.5 1070b36-1a3). See *Met.* A.5 1071a29-b1 for Aristotle’s summary of the prior argument in A.4-5 that there are no principles of all beings strictly speaking, but in a way we can talk about principles of all beings analogically and in another way the ultimate principles of substances will indirectly be principles of all beings.

in the case of music (*en mousikē(i)*) and that there are two quarter-tones. In Iota 1 Aristotle also indicates that the phoneme is one as the measure in the case of articulate sounds (*phōnē*) and that there are multiple phonemes (1053a12-3, 14-7). In fact, looking at the details of Aristotle's discussion of the sense of unity *qua* the first measure of a genus in Iota 1 clarifies what he means when he says in Iota 2 that, e.g., if all beings were tunes, the Ones would be the quarter-tones and the beings would be a number of the quarter-tones. Moreover, when we get clearer on what Aristotle means when he indicates in Iota 2 that the quarter-tones are the Ones with respect to the tunes and that the phonemes are the Ones with respect to the articulate sounds based on Aristotle's discussion of unity *qua* the first measure of a genus in Iota 1, we can also see more easily how the remaining examples in Iota 2 which are not mentioned in Iota 1 (namely, the white with respect to the colors, and the triangle with respect to the rectilinear figures) are supposed to work.

At Iota 1 1052b18-24, Aristotle asserts that the sense of unity *qua* the first measure of a genus applies to the quantities, strictly speaking, and it applies to other things by extension. In the paradigmatic case of the quantities, Aristotle says that a quantity *qua* quantity (*to poson hē(i) poson*) is known either by one (i.e., the unit = *monas*) or by the number, and the number is known by one because a number is a plurality of ones (i.e., units) (1053a30). He adds at 1052b25-7 that the sense of the one *qua* the measure of a genus is extended to other things from this paradigm case; in each genus, the primary thing by which other things in the genus are known is the measure of this genus, and this measure is said to be one in the relevant sense, be it “in the case of *mēkos*, or *platos*, or *bathos*, or weight [*baros*], or speed [*tachos*].” I will talk about the genus of the weight and the genus of the speed as examples of the extension of the paradigmatic case of the one *qua* unit, but let me note first that it is curious that *mēkos*, *platos*, and *bathos* do not seem to be treated as quantities here; by contrast, in *Met.* Δ.13 (the chapter on quantity), *mēkos* is said to be magnitude (i.e., continuous quantity) in one dimension, *platos* in two dimensions, and *bathos* in three dimensions, and a determinate (*peperasmēnon*) *mēkos* is called a line (*grammē*), a determinate *platos* a surface (*epiphaneia*), and a determinate *bathos* a solid (*sōma*) (1020a11-4). In other words, the usual translation of *mēkos*, *platos*, and *bathos* as length, width, and depth does not seem to be correct in these contexts. In any case, it appears to be implied at Iota 1 1052b25-7 that one, two, and three dimensional magnitudes are treated as cases extended from the paradigm case of quantity *qua* quantity and hence are outside of

quantity *qua* quantity. Whether this impression is correct and the continuous quantities are treated as cases outside of quantity *qua* quantity is not very important here; the important thing is that the paradigm case of the sense of the one *qua* the first measure of a genus is the discrete quantities, i.e., the numbers,⁵⁹⁸ and their measure, i.e., the one in the sense of the unit (*monas*).⁵⁹⁹

It is clear why Aristotle treats the numbers and the *monas* as the paradigm case of the sense of the one as the first measure of a genus, and he treats the sense of the one as the first measure applying to the other things, including the continuous quantities as an extension of this. As I will detail below, also in the other extended cases like weights and speeds, when the continuous quantities are measured, Aristotle assumes that we would give their measure as a *number* of a homogenous quantity that is picked as the measure. So, if I want to measure the length of my desk, and if I picked the length of a centimeter as my measure, I would say that the length of my desk is *two hundred* centimeters (a count number, which is what Aristotle means when he talks about numbers), or if I picked the length of a meter as my measure, I can say it is *a fifth* of a meter (a determinate ratio, which Aristotle treats along with numbers: see, e.g., *Met.* Δ.2 1013a26-9 where it is implied that number is the genus of the ratio of two to one). Aristotle seems to think that in measuring something, we are interested in exactness;⁶⁰⁰ so in the ideal cases, we would give a count number or a determinate ratio when we measure something, but in the non-ideal cases, we might also tolerate giving a rough value, e.g., saying that the length of my desk is *a bit over two hundred* centimeters (using a vague numerical relation⁶⁰¹). In short, in

⁵⁹⁸ At *Cat.* 6 4b22-3, 32-7 Aristotle treats speech (*logos*) as a discrete quantity in addition to number, but speech does not seem to be considered under quantity *qua* quantity in the Iota 1 passage under consideration. In fact, it seems that Aristotle means practically the same thing by speech in the *Cat.* 6 passage and the articulate sounds (*phōnai*) in Iota 1 and the sounds (*phthoggoi*) in Iota 2, and at Iota 1 1053a13, 17 the articulate sounds are considered along with the cases of the one *qua* the first measure of a genus extended from the paradigm case of the numbers and the one (i.e., the unit = *monas*). Moreover, in the *Met.* Δ chapter on quantity (i.e., Δ.13), the only discrete quantity considered is multitude (*plēthos*) and a determinate multitude is called a number (*arithmos*).

⁵⁹⁹ It is worth remembering that the one is not a number for Aristotle but a number is a multitude of ones: see, e.g., *Met.* Iota 1 1053a30.

⁶⁰⁰ An indication of this is Aristotle's claim that we want our measure to be exact (*akribes*); for this purpose, we posit as a unit what is indivisible in quantity or in quality, or what lends itself better to be treated as indivisible. For this reason, we pick as our measure something such that when even a small thing is added to it or subtracted from it, i.e., when its exactness is adulterated even a little bit, this would not escape our notice easily. So, we pick a small amount as our measure in liquids or solids or weights or magnitudes, because when a large amount is changed by a small amount, it might escape our notice, but when a small amount is changed equally, we would notice the change more easily. Likewise, we pick the quickest motion of the heavens as our unit to measure the motions of the heavens (i.e., the daily motion of the sphere of the fixed stars in Aristotle); in music, we pick the smallest intervals (the *dieseis*), and in articulate sounds, we pick the shortest articulate sounds (the phonemes) (*Met.* Iota 1 1052b31-3a13).

⁶⁰¹ For determinate (*hōrismenon*) numerical relations (*ta pros ti kat' arithmon*), i.e., determinate numerical ratios, and indeterminate or vague (*aoriston*) numerical relations, e.g., "a bit more than one [*epimorion*]," see *Met.* Δ.15

the case of measuring a length (or a surface, or a solid), we treat a particular length (or a surface, or a solid) as our unit, X, and we say that this length (or surface, or solid) measures *N number* of X (i.e., a count number, or an attribute of some count numbers, i.e., a determinate ratio, or in non-ideal cases, we might also tolerate a vague numerical relation⁶⁰²). The same idea seems to hold of every case of the one *qua* the measure of a genus that is extended from the paradigm case of numbers and the *monas*. In the case of weight, we pick a particular weight as our measure and measure every other weight as a number of our measure. In the case of speed, we pick the speed of a particular motion as my measure, and we measure the speeds of other things as a number of it. In the case of musical tones, the smallest intervals are the *dieseis* and the other tones can be expressed as a number (i.e., multiple) or a ratio of them. In the case of articulate sounds, say, words, a word consists of a determinate number of phonemes. So, we can measure “banana” as six phonemes, or more specifically as three “a”s, two “n”s and one “b”, and in this sense the phonemes are the measures of the articulate sounds.⁶⁰³ In all these genera, the measure or the finite number of measures are said to be one in the sense of the one *qua* the first measure of that genus.

Aristotle says that “the measure is always of the same genus [as what is measured] [*suggenes*], for [generally speaking,] of the magnitudes, [the measure is] a magnitude, and in particular, of the one-dimensional magnitude [*mēkous*], it is a one-dimensional magnitude, of the two

1020b32-1a9; it is said at the end of this account, “therefore, all these relatives are said numerically [*kat’arithmon*] and are attributes [*pathē*] of number.”

⁶⁰² See previous footnote, for why I call the determinate ratios and the vague numerical relations “attributes” of numbers. I want to alert the reader who is not familiar with ancient mathematics that what we call an irrational number would not be considered a number by Aristotle or his contemporaries; this is why Aristotle seems to say that there are two distinct units when we are dealing with the side and the diagonal of a square (*Met.* Iota 1 1053a17-8); in other words, e.g., if I draw a diagonal of a square and then divide this square into four equal squares by connecting the midpoints of its sides, and if I want to measure the line segments I obtained as a result, I cannot just take the side of one of the small squares as my only measure and measure the diagonal of the big square as $2\sqrt{2}$ of the small side; in this case, I need to posit two separate units (say, the side and the diagonal of the small square).

⁶⁰³ As I also paraphrased above, in Iota 2 examples of the one in each genus, Aristotle says, “similarly also in the case of the sounds, the beings would be a number of phonemes [*stoicheiōn*], and the one would be a vowel [*stoicheion phōnēen*]” (1054a1-2). By contrast, the ones in the Iota 1 example are apparently all the phonemes, not only the vowels (1053a13, 17). Perhaps the idea is that when we measure articulate sounds (*phōnai* in Iota 1, or *phithoggoi* in Iota 2), we measure it as a number of syllables, and the determiner of a syllable is a vowel (treating diphthongs as a single vowel); so by counting the vowels in an articulate sound, we can tell by how many syllables it measures. In this sense, the vowels would be our units. So, e.g., “banana” is measured as of three syllables or equivalently as of three vowels. In the *Categories* account of the quantities, Aristotle says that there are two kinds discrete quantities, numbers, and speech (*logos*); to justify why *logos* is a discrete quantity, Aristotle says “it is clear that *logos* is a quantity, for it is measured by long and short syllables; [by *logos*] I mean the *logos* which is generated with articulate sounds [*meta phōnēs*],” i.e., *logos* in the sense of speech (*Cat.* 6 4b32-5).

dimensional magnitude [*platous*], a two dimensional magnitude, of the articulate sound, an articulate sound, of weight, a weight, and of the units [i.e., of the number], a unit [*monas*]" (*Met.* Iota 1 1053a24-7). According to this understanding of the measure, which applies to all the particular examples given in Iota 1 and Iota 2, the measure and the things which are measured are in the same genus but more specifically the measure is one species under this genus and each of the measured things is another species under the same genus. A particular *kind of length*, say the length of a centimeter, is used as the measure of *the other kinds of lengths*, and each of the other kinds of length is measured as a number of this particular kind of length we treat as our measure. So the kind of the length of 10 centimeters is measured as ten centimeters, and through this, e.g., my individual book which has this kind of length (sc., the length of 10 centimeters) is also measured as ten centimeters long. Particular *kinds of articulate sounds*, i.e. phonemes, are used as the measures of *the other kinds of articulate sounds*, and each of the other kinds of articulate sounds is measured as a number of these particular kinds of articulate sounds, i.e., the phonemes. So, the type of utterance "banana" is measured as an utterance of six phonemes (or more specifically, three type "a"s, two type "n"s, and one type "b"); through this, my particular utterance of "banana" now is also measured as an utterance of six phonemes. I call this Aristotle's first model of measure and when something is said to be one in relation to a genus as the measure of that genus according to this understanding of measure where the measure and the measured are different species under the same genus, I will shortly call the measure one *qua* unit₁ of this genus.

As I mentioned above, after T8 in Iota 2, at 1053b27-4a4 Aristotle provides examples to illustrate what the One is in various genera. Apart from small variances, all these four examples have the following format: if all beings were Ys, the One would be a kind of Y (or a few kinds of Y), say X, and all beings would be a number of X. In the four examples, the respective genera and their One or Ones are as follows: for colors, the white, for tunes, the two *dieseis*, for sounds, the phonemes (or the vowels in particular), and for the rectilinear figures, the triangle. As we saw above, the two *dieseis* are said to be one *qua* unit₁ with respect to tunes in Iota 1, and this should mean that any other tune can be measured as a number (or a ratio) of these two smallest intervals in the musical scale. Likewise, the phonemes are said to be one *qua* unit₁ with respect to articulate sounds in Iota 1, and this should mean that any other articulate sound can be measured

as a number of phonemes (e.g., “banana” is measured as six phonemes, or more specifically, as three “a”s, two “n”s, and one “b”).

The other two examples in Iota 2 can also be interpreted as examples of this sense of one *qua* unit₁. As Aristotle puts it at Iota 2 1053b29-34, “... at any rate, in colors *to hen* is a color, e.g., the white; next, the other [colors] clearly come about from this and the black, but the black is the privation of the white, just like darkness [*skotos*] is [the privation] of light; so if beings were colors, the beings would be some number [*tis arithmos*], but [a number] of what?⁶⁰⁴ Of course, it is clear that [they would be a number] of colors, and *to hen* would be some one thing, e.g., the white.” To explain how the colors other than the white and the black come about from the white and the black, Aristotle presents two hypotheses at *Sens.* 3 439b18-440a15. According to the both hypotheses, we should imagine colors to fall on a line ranging between the two extrema, the white and the black. According to the first hypothesis, an intermediate color comes about when a little bit of white and a little bit of black are put beside each other (*par’ allēla tithemena*) so that this little patch of white or this little patch of black would not be visible by itself but when they are put together an intermediate color would be visible; according to the second hypothesis, they are put on top of each other (see *to epipolēs* and *to en bathei* at 440a14). It seems that according to both hypotheses, we have two options: either it is the case that when there is an exact numerical ratio between the white and the black used to produce an intermediate color, we obtain a “pleasant” color, as in the case of musical harmony (*sumphōnia*), and when there is no exact numerical ratio between them, we obtain a non-pleasant color. Or it is the case that all colors are produced as a result of an exact ratio between the white and the black used to produce this color but some of these ratios will produce “ordered [*tetagmenas*]” colors while others will produce colors which are “not ordered [*ataktous*].”

Colors for Aristotle are qualities, not quantities. So, strictly speaking we cannot talk about, e.g., two white and three black. That said, Aristotle makes it clear that we can talk about things which are not quantities as *quantified*, or as Aristotle calls them, as *posa kata sumbebēkos*. We can treat something as *quantified* because its subject or something about it is or has a quantity (*Cat.* 6 5a38-b10, *Met.* Δ.13 1020a14-7, 26-32). This idea is also used in the other cases of the one *qua* unit₁ discussed in Iota 1 beyond the quantities: weight, speed, tunes etc. are not quantities for

⁶⁰⁴ Reading τίνων with the mss. and Ross against Jaeger’s τινῶν.

Aristotle, but they are *posa kata sumbebēkos*, and in this way, we can say that, e.g., this table is five times as heavy as this piece of metal whose weight I pick as my measure and call it a kilogram, and we can say that the weight of this table is five kilograms. In particular, as can be inferred from *Cat.* 6 5b1-2 and 6-8, we can speak of a color as quantified because the proper subject of a color is surface and a surface is a continuous quantity; so based on the size of the surface of a color, we can speak of this color as quantified. In this way, we can meaningfully say that, e.g., the color red is produced when two unit-areas of white is put next to three unit-areas of black, or we should perhaps think of applying white colored dye on top of a black colored dye and our relevant measure in this case might be the volume of the dye.

So either all intermediate colors are produced as a result of putting together white and black according to a certain numerical ratio between their amounts, or only the “pleasant” colors are produced like this. This means that in the example in Iota 2, Aristotle either talks about all colors or only about the “pleasant” colors similar to the way that when he says that the *dieseis* measure the tunes (*melē*), he does not mean that they measure all sounds in the sense of measuring we are interested in here (i.e., primarily as a number or a ratio of the unit or the units), but he means that the *dieseis* measure only the ‘pleasant’ sounds, i.e., the notes in the musical scale. In either case, each of the colors we are interested in would be measured as a number of the white to a number of the black, and since Aristotle says at Iota 2 1053b30-1 that the black is the privation of the white, any color we are interested in would be measured as a number of the white to a number of the lack of white. For example, say, the red is produced from two units of the white and three units of the black; this would mean the red is measured as (to use the modern symbol of minus to represent privation) 2:-3 white. In this way, the color white would be the measure of every other color (that we are interested in) in the strict sense of being a measure distinguished above, and so in the genus of colors, the color white would be the one *qua* unit₁.

The remaining example from Iota 2 is the triangle with respect to the rectilinear figures. As Aristotle puts it, “if [beings were] rectilinear figures, they would be a number of figures, and *to hen* would be the triangle” (1054a3-4). For ease of discussion, let’s focus on convex polygons, because I am not sure if what I say in the following holds of all rectilinear figures but it holds of convex polygons. A convex polygon of *n*-sides can be partitioned into *n*-2 triangles such that the vertices of these triangles are the vertices of the polygon and two of these triangles have two of

their sides the same as four sides of the polygon and the remaining triangles have one of their sides the same as a side of the polygon. So, for example, if we have a square, and if we draw the diagonal of it, we get such two desired triangles. If we have a pentagon, we can pick one vertex and connect it to the remaining two vertices to which this vertex does not already connect through the sides of the pentagon; in this way, we would obtain three desired triangles. Since these triangles partition the polygon, the sum of the areas of these triangles would be equal to the total area of the polygon. Also, since the vertices of the triangles are the vertices of the polygon, it can be shown that the sum of the internal angles of the triangles is equal to the sum of the internal angles of the polygon (i.e., the sum of the internal angles of an n -sided convex polygon is equal to $n-2$ times two right angles). In other words, we can measure the n -sided polygon as of $n-2$ triangles, and this claim would indicate some geometrically interesting properties of the polygon (i.e., the sum of the internal angles of the polygon, and this way of partitioning the polygon shows, at least, that the geometrical understanding of the area of the polygon is coherent because we know how to compare the areas of triangles and in this way we can express the area of such a polygon as the areas of triangles, so that the area of one polygon can be compared to the area of another polygon). So in this sense the triangle would be the measure of the convex polygons and in the genus of convex polygons, the triangle is the one *qua* unit₁.⁶⁰⁵

Recall that these examples in Iota 2 are supposed to illustrate what the One (and Being) is or the Ones (and Beings) are in the relevant genera. In all these examples, Aristotle seems to be talking about a species (or several species) which is one *qua* unit₁ with respect to the relevant genera, i.e., this species is the measure of the other species under the same genera such that each of the other species under the same genera is measured as a number (or a ratio) of this species which is the measure. Recall that the One is preeminently one, and Being preeminently *is* and I suggested that this minimally means that the One is the cause of unity for the other things and Being is the cause of being for the other things (in the relevant class). It seems that this is what Aristotle has in mind when he asks in the eleventh aporia whether *to hen* or *to on* have the essence to be *hen* or *on*, or whether something with a different essence is *to hen* or *to on*. As can be seen T7 from *Met. B.4*, Aristotle says that Empedocles seems to treat love (*philia*) as *to hen* because according

⁶⁰⁵ Aristotle seems to be alluding to something along the lines of what I described at *DA II.3* 414b19-32 (especially, 19-22, 29-2), i.e. that the geometrical figures form a series, the triangle the first, the quadrilateral figure the second, presumably the pentagon the third, the hexagon the fourth etc., because a quadrilateral figure can be partitioned into two triangles, a pentagon into a triangle and a quadrilateral figure, a hexagon into a triangle and a pentagon etc.

to Empedocles, love is responsible for making things one. Aristotle adds that other natural philosophers think that *to hen* and *to on* in the relevant sense “from which the beings are and have come about is fire” and another group of natural philosophers think that this is air. It seems that we are still operating with the same understanding of *to hen* and *to on*; if so, when these natural philosophers think in effect that *to hen* “from which the beings are and come about” is fire or air, they should be thinking not only that fire or air is a principle as a material component of the beings which are and come about from it but that it is the principle that is responsible for their unity. In other words, a principle as the ultimate material component of composite things can be called Being because it might be considered that the composite things are composed of such material components and hence the being of the composed things depend on these principles as the ultimate material components; in this sense, the principles as the ultimate material components of things would be (at least one of) the causes of being for the composite things. However, it is difficult to imagine in what sense the principles as the ultimate material components would be the cause of unity for the composite things *as such*. Let me illustrate with an example: if a philosopher asserts that there are four kinds of ultimate material components of everything else that exists, say, air, fire, water, and earth, it would follow that everything else that exists is some combination of these four elements. In this respect, we can call these four elements Beings, because everything else depend on these four elements for their being. However, it seems more difficult to understand why any one would say that these elements or some of them are the Ones because it is not obvious how the cause of the unity of a combination is one of the things combined. We can find a way out of this if we assert that these four elements have the function of being the ultimate components of other things, but, e.g., the fire also has a further active function of unifying things.⁶⁰⁶ In this case, it would make sense to call all the four elements Beings but it would make sense to call only the fire the One.

In fact, as we saw in my discussion above of Aristotle’s understanding of the cause of being and unity for composite substances in Z.17 and H, the material components of a composite substance would not be the cause of its being in a strong sense because we are interested in the cause of why this composite substances exists *as what it is*, i.e., with the determinate nature that it has. So, as I summarized above, if we put aside the efficient cause of the generation of composite

⁶⁰⁶ Compare *Met.* A.4 984b5-8.

substances, the cause of the fact that the composite substance *is* (what it is) and the cause of the fact that the composite substances is genuinely one thing (and not a mere heap of material components or a mere heap of matter plus form) is the form or the essence of this composite substance, i.e., its substance as actuality. So, strictly speaking, the One and the Being of a composite substance is its form or essence, and in a way we can also say that the efficient cause of the generation of this composite being is also a One and a Being for it. And even more loosely, we can perhaps say that the material components of this composite substance are also its Beings but this would be the weakest sense of Being and it does not seem that we can say in any meaningful way that the material components by themselves are Ones, i.e., causes of unity for the composite. It seems that these observations about the composite substances can also be extended to other composite things in general (e.g., an intermediate color as composed of the white and the black): what makes a composite thing *one* genuine thing and not a mere heap of its components and what makes a composite thing to *be* a determinate thing distinct from its components is primarily its form; moreover, if this composite thing is something generated, the efficient cause of its generation can perhaps be considered a cause of its unity and being. More loosely, its components can be considered among its causes of being as the components are necessary for the composite to exist, but it seems out of place to call the components a cause of unity for the composite thing because when we try to explain why the composite is *one* thing, we are trying to explain why its components are not a mere heap but are composed together to form a genuinely one distinct thing and the components themselves *qua* components cannot explain this.

Back to the examples Aristotle gives of the One and Being for the natural philosophers in the eleventh aporia as reproduced above in T7. I said above that according to Aristotle, for Empedocles, the One is love; it seems that this is because love is at least the efficient cause of the unity of things. For other groups of natural philosophers, Aristotle says that *to hen* and *to on* in the relevant sense, i.e., the One and Being is fire or air; as I suggested above, when Aristotle says that the One is fire or air for these philosophers, he must mean that for these philosophers fire or air is not simply a material component but it also has the function of somehow unifying a heap of material components. At 1001a17-9, the last sentence in T7, Aristotle completes his account of the natural philosophers on the One and Being by saying that “the [thinkers] who posit more elements [think] in the same way, for it is necessary also for them to claim that *to hen* and *to on*

are precisely whatever principles they think there are.” In light of what I argued so far, this claim needs a qualifier. It is understandable to claim that whatever principles some philosophers posit, these would be Beings for them, in a strong or weak sense (i.e., the principles which are merely the material components of things would be their Beings in a weak sense). However, as I argued above, it is hard to understand in what sense the principles only as the ultimate material components would be cited to explain the unity of things because when we try to explain the unity of the composite things, we are trying to explain why a certain portion of the material components is not a mere heap but is genuinely one thing.

Recall that in the four examples in Iota 2, we expect Aristotle to give examples of the One or the Ones in some genera, but in his actual examples of what is said to be *to hen* in a genus is one *qua* unit₁ in relation to that genus. Consider the genus of articulate sounds, and let’s assume that the relevant Ones are said to be the phonemes. The phonemes are like material components of the composite articulate sounds. The reason why “banana” is one word and not a heap of phonemes is not because it has three “a”s and two “n”s and one “b” in it. Whatever the cause of its unity is, it is not just the phonemes it is composed of. As I explained above, in some weak sense, we can call the phonemes Beings for the articulate sounds, but it is not easy to understand why we would want to call the phonemes the Ones for the articulate sounds, if we think that it is necessary for the One to be the cause of unity for the other things (in the relevant genus). The same thing can also be said about the other three examples mentioned in Iota 2. In general, when X is one *qua* unit₁ in relation to the genus of Ys, the other Ys in this genus are measured as a number or ratio of X, and in this sense X can be considered like a material principle of these other Ys; but insofar as X is like a material principle for them, we might in some sense call it the Being for the Ys but it seems unhelpful to call it the One for the Ys.⁶⁰⁷

⁶⁰⁷ Aristotle states in *Met.* Iota 7 that even though all colors are ranged between the white and the black which are the primary contraries in the genus of color, the differentiae of the intermediate colors will not be the differentiae of white and black, because otherwise every intermediate color would simply be white or black; instead, the differentiae of the intermediate colors “will then be between the primary contraries, and the primary differentiae are dilating and contracting [*to diakritikon kai sugkritikon*]” which are the differentiae of the white and the black respectively (1057b 8-11, 13-9). If this idea is expressed using the model described above according to which each intermediate color is produced as a ratio of white and black, and using the idea from *Met.* H that the form or the essence of a thing is rather indicated through the differentia, and the form or the essence of thing is its substance or its being in the sense that it *is* (what it is and not a mere collection of its components) by virtue of its form or essence, the color red would be defined as, e.g., a color (*genus*) which is two whites to three blacks (*differentia*), i.e., a color (*genus*) which is two units dilating and three units contracting (*differentia*). In this way, the differentia of an

There is a way to understand why in the Iota 2 examples under consideration Aristotle was tempted to call the things which are one *qua* unit₁ in relation to some genera the Ones for that genera. I said that the One is one and is one *preeminently*; I suggested that this minimally means that the One is the cause of unity for other things. I adapted this language from *Met. α.1* 993b24-31 where Aristotle's interest is to explain that what is preeminently (*malista*) X is the cause of X-ness for the other X things. His aim is to make this claim about truth (and being) but for this purpose, he first gives the example of fire; he says, "for example, fire is the hottest thing [*themotaton*], for this thing [i.e., fire] is also the cause of hotness [*thermotēs*] for other things" (993b25-6). Although this does not seem to be what Aristotle is primarily interested in in this passage from *Met. α.1*, it is possible to interpret what is preeminently (*malista*) X (in a class) to mean what displays X-ness to the greatest degree or in the greatest number of the relevant aspects and displays the opposite of X-ness to the least degree or in the smallest number of the relevant aspects (in the relevant class). According to this understanding, fire is preeminently hot because it has the most hotness and least coldness among the things it is compared with. Clearly this understanding of preeminently X can come apart from the understanding of preeminently X as the cause of X-ness for other things. It seems that what is preeminently one would be a case in point. We might have something that displays unity to the greatest degree and in the greatest number of aspects specified by the relevant sense of unity and displays multiplicity to the smallest degree and in the least number of aspects according to the opposite sense of multiplicity in the class it is compared with, and we can call this thing the One according to the sense of preeminently X distinguished right above, but it does not need to be the One according to the sense of preeminently X distinguished in my preceding discussion, i.e., in the sense of being the causes of X-ness for the other things in that class. Let's call what is the One as having 'most unity' and 'least multiplicity' according to the relevant sense of unity and the corresponding sense of multiplicity "the One with most unity," and let's call what is the One as being the cause of unity for the other things according to the relevant sense of unity "the One as the cause of unity."

In the examples from Iota 2 reviewed above, the Ones can be understood as the One with most unity, but it is more difficult to understand them as the One as the cause of unity. For example,

intermediate color would be between the differentiae of the primary contraries in colors, i.e., the differentiae of the white and the black.

one of the examples mentioned in Iota 2 is that the phoneme is *to hen* with respect to the articulate sounds composed of the phonemes. As I explained above, it is difficult to see the phonemes as the Ones as the cause of unity for the articulate sounds because, e.g., “banana” is composed of three “a”s, two “n”s, and one “b” but it seems that in response to the question of why these three “a”s and two “n”s and one “b” form one articulate sound and not a mere heap of three “a”s and two “n”s and one “b”, we would not simply say, “because it is composed of these phonemes.” However, it seems easier to see the phonemes as the Ones with most unity with respect to the other articulate sounds. The other articulate sounds display multiplicity even as articulate sounds because they can be divided into other articulate sounds and they are composed of simpler articulate sounds. However, the phonemes are not divided into simpler articulate sounds; they are the simplest articulate sounds. So “banana” is in a way *one* articulate sound (we can say it is *actually* one articulate sound) but in another way it is also *many* articulate sounds (we can say it is *potentially* many articulate sounds in the sense that it can be divided into many articulate sounds). It is true that “banana” is not *simply* three “a”s and two “n”s and one “b”, but “banana” is also *in a way* three “a”s and two “n”s and one “b.” More generally, we can say that the one *qua* unit₁ is the One with most unity compared to the other things in the genus it is the measure of, because the measure is indivisible and simple or is treated so (Iota 1 1052b31-3a13) while the other things in the genus it is the measure of are measured as a multiplicity of the measure; so the other things are considered, in a way, as divided into the measure, or in a way, composed of the measure.

Aristotle seems to be taking the One in the sense of the One with most unity in his examples in Iota 2 but we expect him to give examples of the One in the sense of the One as the cause of unity. The bigger worry is not which understanding of the One Aristotle favors in his discussion in Iota 2 but that he seems to conflate the two distinct understandings of the One. To this conflation, a further problem is added when Aristotle says in the following passage in Iota 2 that just as we find the One as something with a determinate nature in a genera in the accidental categories, as in the examples in Iota 2 reviewed above, we should find the One as something with a determinate nature in the substances too.

T9 *Met.* Iota 2 1054a4-9

ὁ δ' αὐτὸς λόγος καὶ ἐπὶ τῶν ἄλλων γενῶν, ὥστ' εἴπερ καὶ ἐν τοῖς πάθεσι καὶ ἐν τοῖς ποιοῖς καὶ ἐν τοῖς ποσοῖς καὶ ἐν κινήσει ἀριθμῶν ὄντων καὶ ἐνός τινος ἐν ἅπασιν ὃ τε ἀριθμὸς τινῶν καὶ τὸ ἐν τὶ ἔν, ἀλλ' οὐχὶ τοῦτο αὐτὸ ἡ οὐσία, καὶ ἐπὶ τῶν οὐσιῶν ἀνάγκη ὡσαύτως ἔχειν· ὁμοίως γὰρ ἔχει ἐπὶ πάντων.⁶⁰⁸

The same account also holds in the case of the other genera; so, in the passions, in the actions, in the qualities, and in the movements there are numbers and there is some one thing, and in every case the number is of some things and the one is some one thing, but the substance [of the one] is not just this itself [i.e., is not to just to be one]; since this is the case, in the case of the substances it must be the same too.

Recall that at Iota 2 1053b24-8, quoted as T8 above, Aristotle claims that *to hen* does not have the nature of being one but it has some other nature, and since *to hen* and *to on* are said in an equal number of ways, apparently following the categories, in the qualities and in the quantities and in each category, we should look for a particular thing which is *to hen*. Then to illustrate this, at 1053b28-4a4, he gives four examples (the white in colors, the *dieseis* in tunes, the phonemes in articulate sounds, and the triangle in rectilinear figures). So, Aristotle illustrates his claim in some genera of the qualities or maybe also of the quantities (if the rectilinear figures can be considered quantities and not qualities because of their shape) in the passage between T8 and T9 in Iota 2. If we also consider the other comparable examples of the one *qua* unit₁ from Iota 1, we can understand that Aristotle might take himself to have illustrated this claim in some other genera too. So in T9, Aristotle seems to assume by induction that he sufficiently showed that (1) *to hen* is some particular nature in *all the genera in the accidental categories*, and he adds that (2) the same idea must hold *also in the case of the substances*. However, both of these claims

⁶⁰⁸ Uṣṭāth's translation in *Long Commentary* (1273.9-13):

وهذا القول بعينه في الأجناس الآخر أيضا فإذا إذا كانت في الانفعالات وفي الكميات وفي الحركة عدد وفي كلها واحد ما وكان العدد لأشياء ولو واحد ما وأيضا وليس هذا بعينه في الجوهر فمضطر أن يكون مثل ذلك في الجوهر أيضا فإنه متشابه في جميعها. The underlined expression corresponds to καὶ τὸ ἐν τὶ ἔν in Jaeger's edition of the Greek text; according to Jaeger's apparatus, ms. E (from the alpha tradition which Uṣṭāth by and large follows) reads τὶ ἐν and ms. J (also from the alpha tradition) reads τί ἐν. وأيضا in the underlined expression looks corrupt. If Uṣṭāth read what Jaeger prints (probably one would read E by correcting ἐν into ἔν because τὶ ἐν ἄλλ' οὐχὶ... is ungrammatical), he could translate it as واحد ما واحد; the corruption of واحد into وأيضا without the diacritics would not be too far-fetched (if the curved upper part of *hā'* in the initial position was written so as to complete a whole, and if the vertical stroke of the *dāl* was written longer than usual, واحد can be read as something similar to واصا and since this does not make sense, someone could correct it into وأيضا (Bouyges also suggests that Uṣṭāth's original translation might have had واحد instead of وأيضا). If Uṣṭāth had the reading of J in his exemplar, he would translate the underlined expression as something like الواحد ما لواحد; I think this is also possible.

lead to problems. First, it does not seem that we can find something which is one *qua* unit₁ in every genera under all the accidental categories. For example, states (*hexeis*) are genera under the category of quality and character states or ethical states would also be qualities. For now, let's focus on the character states that deal with responding to a threat. If the relevant character state is characterized by responding to a threatening situation improperly with an extreme degree of excess or deficiency in the response, this character state would be one of the two vices in this domain, i.e., rashness or cowardice. If the character states is characterized by responding to a threatening situation appropriately, this character state would be the virtue in this domain, i.e., courage. We will also have character states that occupy some intermediate positions, so to speak, inside the triangle whose vertices are determined by the two vices and the virtue in this domain. So, we will have some people who are neither rash, nor cowardly, nor courageous when they respond to a threatening situation. What is the one *qua* unit₁ in the genus of character states pertaining to the responses to threatening situations? Is it courage? Then we should measure all the other character states in this genus as a number or a ratio of courage, but what would that look like? If we stick to our model of the one *qua* unit₁ as we saw in all the four examples Aristotle gives right above in Iota 2 to illustrate precisely the issue under consideration, we will not be able to find *to hen* in this way in some genera even under the accidental categories.

When we try to extend this idea to the substances, we face an even bigger problem. In the accidental categories, there are *some* genera in which we cannot find the appropriate *to hen* as the one *qua* unit₁. In the category of substance, it seems that we cannot find this in *any* genus. Pick any genus in the category of substance: what will be the one *qua* unit₁ there? Can we say, e.g., that one of the animal species is the one *qua* unit₁ with respect to the remaining animal species? For example, if we want to say that in the genus of animals, the measure is the human species, we should be able to state that, e.g., the dog species is five humans or 3:5 humans or something like this. This does not make sense. In fact, it does not seem to make sense in *any* genus in the category of substance. Perhaps a way out is to say that if we just focus on the corporeal substances, the ones *qua* unit₁ for them are the elements, because homeomerous substances come about from elements, anhomeomerous substances come about from homeomerous substances, and all the familiar substances around us, e.g., the animals and the plants are composed of homeomerous substances. So perhaps in a way we can talk about the homeomerous and then the anhomeomerous substances as a certain ratio of the elements, and a

familiar substance that is composed of anhomeomerous substances, like a human composed of bones, and flesh, and blood etc., can be measured as a ratio of bones, and flesh, and blood etc. So perhaps, in the end, we can measure a human as a certain embedded ratios of the elements, and a horse as another embedded ratios of the elements and so on. If so, the elements would be the ones *qua* unit₁ that we are looking for.⁶⁰⁹

The problem with this view is that the elements are not substances in a strong sense for Aristotle (see *Met. Z.16* 1040b5-10; also Aristotle asserts the general principle at the end of this chapter at 1041a4-5 that “no substance is composed of substances [*out’ estin ousia oudemia ex ousiōn*]”).

Another problem with this view is that this would only cover the material substances and we would still be left without such Ones that we are looking for in the case of the immaterial substances, e.g., the movers of the heavens.

Let me summarize my discussion of Aristotle’s account in Iota 2 so far and the problems emerging from this picture before I move on to discuss the Iota 2 version of the being-unity equivalence argument. Aristotle starts the chapter by explicitly reminding the reader of the eleventh aporia from *Met. B*. This aporia is about whether *to hen* and *to on* have the essence of *being one* and *being* respectively (Plato and the Pythagoreans) or something with a different essence is said to be *to hen* and *to on* (the natural philosophers). I argued that *to hen* and *to on* in the context of the eleventh aporia mean the One and Being, i.e., what is preeminently one and what is preeminently being, and this means minimally that the One is the cause of unity for other things and Being is the cause of being for other things. Aristotle favors the second position in this aporia, namely that something with an essence other than just to be one or just to *be* is the One or Being. Then Aristotle asserts that this idea should also apply to every case and since *to hen* and *to on* are said in an equal number of ways, following the categories, we should not seek something (or a finite number of things) which is the One (or Being) for all the things in all the categories, but we should seek the One (and Being) under each category, and in fact in some particular genera under each category. To illustrate this point, Aristotle gives four examples; in these examples, what is identified as the One for a genus is one *qua* unit₁ with respect to that genus; e.g., the phonemes are one in this sense in the genus of articulate sounds and every

⁶⁰⁹ There are places where Aristotle seems to be fine with saying that, at least, the anhomeomerous substances like the flesh can be understood as a certain ratio of the elements (or elemental qualities like hot and cold): see, e.g., *DA* III.4 429b15-6.

articulate sound other than the phonemes is measured as a number of phonemes. But a thing which is one *qua* unit₁ in relation to a genus is not the One for that genus in the sense that it is not the cause of unity for the other things in this genus; yet, we expect Aristotle to operate with this understanding of the One here, elaborating on his solution to the eleventh aporia. Instead, Aristotle seems to operate with a different understanding of the One, according to which something is said to be the One in a genus if it has ‘most unity’ and ‘least multiplicity’ in this genus according to the relevant sense of unity. So, the first problem with Aristotle’s account is that in his four examples, we expect him to illustrate the One as the cause of unity, but he seems to illustrate the One with most unity, and he does not say anything to alert the reader about this discrepancy. The second problem is that the idea of unity *qua* unit₁ does not seem to apply to some genera in the accidental categories, and it does not seem to apply to *any* genus in the category of substance.

Now we can evaluate the Iota 2 version of the being-unity equivalence argument. Right after the passage quoted as T9 above, Aristotle says,

T10 *Met.* Iota 2 1054a9-19, Uṣṭāth’s translation in *Long Commentary*, 1273.13-4.3, 1278.7-9.3

ὅτι μὲν οὖν τὸ ἐν ἐν ἅπαντι γένει ἐστὶ τις φύσις, καὶ οὐδενὸς τοῦτό γ’ αὐτὸ ἢ φύσις τὸ ἐν, φανερόν, ἀλλ’ ὥσπερ ἐν χρώμασι χρῶμα ἐν ζητητέον αὐτὸ τὸ ἐν, οὕτω καὶ ἐν οὐσίᾳ οὐσίαν μίαν αὐτὸ τὸ ἐν·

[1] ὅτι δὲ ταῦτὸ σημαίνει πως τὸ ἐν καὶ τὸ ὄν, δῆλον [2] τῷ τε παρακολουθεῖν ἰσαχῶς ταῖς κατηγορίαις καὶ [3] μὴ εἶναι ἐν μηδεμιᾷ οἷον οὐτ’ ἐν τῇ τί ἐστίν οὐτ’ ἐν τῇ ποῖον, ἀλλ’ ὁμοίως ἔχει ὥσπερ τὸ ὄν καὶ [4] τῷ μὴ προσκατηγορεῖσθαι ἕτερόν τι τὸ εἶς ἄνθρωπος τοῦ ἄνθρωπος ὥσπερ οὐδὲ τὸ εἶναι παρὰ τὸ τί ἢ ποῖον ἢ πόσον καὶ τὸ ἐνὶ εἶναι τὸ⁶¹⁰ ἐκάστω εἶναι.

⁶¹⁰ Keeping the reading of the mss. against Jaeger’s emendation of τὸ into τοῦ, who proposes this emendation on the assumption that τὸ ἐνὶ εἶναι τοῦ ἐκάστω εἶναι depends on (“pendet a”) τῷ μὴ προσκατηγορεῖσθαι; this is possible, but there would be some incongruence according to this reading; the first item in the example of the τῷ μὴ προσκατηγορεῖσθαι claim is clearly an expression “*heis anthrōpos*” while presumably τὸ ἐνὶ εἶναι does not refer to the expression “*heni einai*”. Ross adds τῷ εἶναι before τὸ ἐνὶ εἶναι and this gives more or less the same sense as my translation. I assume that τὸ ἐνὶ εἶναι τὸ ἐκάστω εἶναι is a nominal sentence without an explicit copula, still under ὥσπερ. In any case, the sense is more or less the same according to all of these construals, namely that τὸ ἐνὶ εἶναι and τὸ ἐκάστω εἶναι are the same in relevant ways, and if I have to accept an emendation, I prefer Ross’ over Jaeger’s.

So, on the one hand [*men oun*], it is clear that the one is some nature in every genus and the nature of none is this thing itself, i.e., the one, but just as in the colors we should seek the one itself to be some one color, in the same way also in the substances [we should seek] the one itself to be some one substance.

On the other hand [*de*], [1] it is clear that the one and being somehow signify the same thing [2] from following [*parakolouthēin*] the categories in the same number of ways and [3] [from] not being in any [single category], as for instance it is not [entirely] in [the category of] substance [*en tē(i) ti estin*], nor in [the category of] quality, but it is similar to how being is, [4] and from not being predicated as another thing in addition, [e.g.,] “one human” [is not predicated as another thing in addition] of human, just as being [*to einai*] is not beyond substance [*to ti*] or quality, or quantity either, and to be one [*to heni einai*] is just to be each thing [*to hekastō(i) einai*].

فبين أن الواحد في كل جنس من الأجناس طبع ما وليس هذا الواحد بعينه طبعاً لشيء منها ولكن كمثل ما في الألوان يطلب لون واحد هو الواحد بعينه كذلك في الجوهر أيضاً يطلب جوهر واحد هو الواحد بعينه.

[1] وأما أن معنى الواحد هو بنوع ما بمعنى الهوية فبين [2] فإن أنواع متابعاتها للمقولات متساوية [3] وبأن إنيتها ليست واحدة ولا أحدها وحدة مثل ما ليس واحد للمقولة التي تقال ما هي ولا للكيفية واحد بل هي متشابهة مثل الهوية [4] وبأنه لا يزداد على مقالتها شيء آخر مثل واحد إنسان على إنسان كمثل ما ولا بالإنية ما خلا أي شيء أو أي أو كم والذي هو إنية الواحد أيضاً لإنية كل واحد.

First, a note on Uṣṭāth’s Arabic translation of this text. The Arabic text I reproduce above is the Textus found in Averroes’ commentary in Bouyges’ edition. In Appendix: Iota 2 version of the being-unity equivalence argument, I say more on how Uṣṭāth’s original translation possibly differed from the text in Averroes’ commentary. I divided T10 into two chunks (for ease of discussion, I call each chunk a ‘paragraph’) along with the *men... de...* division. The Arabic translation closely follows the Greek in the first ‘paragraph’ in T10; so, it is not worth devoting a separate discussion of the Arabic translation of the first paragraph. The Arabic translation of the second ‘paragraph’, by contrast, has some noticeable differences from the Greek text as we have it or renders it in a misleading way (especially in (3) and (4) of T10); as we will see below, what Aristotle means in the second paragraph in relation to the preceding discussion in Iota 2 leading to it is not easy to understand, and this difficulty would have been even greater for someone who

was reading Aristotle from Uṣṭāth's translation. I discuss how Uṣṭāth seems to have understood his Greek exemplar in Appendix: Iota 2 version of the being-unity equivalence argument.

As we will see, the two 'paragraphs' in T10 express different ideas, but as I will explain below, I think that they express related ideas which together present Aristotle's summary of his discussion in what we have in the modern editions as the second chapter of Iota.

T10 embodies a *men oun... de...* construction. The *men oun... de...* construction often marks a transition to a new unit of discourse (paragraph or chapter) in Aristotle.⁶¹¹ For example, at the end of Iota 1, we have a *men oun* (1053b4-6) *de* (1053b6-8) construction summarizing or concluding the preceding unit of discourse apparently starting at 1052b1, and then the next discussion starts at 1053b9 with *de* which is marked as the beginning of Chapter 2 in modern editions. We have a similar (*men oun... de...*) *de...* construction at the end of Chapter 2 and the beginning of Chapter 3 in the modern editions.⁶¹² It appears that the *men oun... de...* quoted as T10 above that forms the end of Chapter 2 in the modern editions is the conclusion of the discussion in this chapter, i.e., Aristotle's solution to the eleventh aporia, and the following *de* sentence starting at 1054a20 is the beginning of the new discussion on the many as the opposite of the one. So even though I divided T10 into two chunks along with the *men... de...*, it seems that T10 as a whole presents Aristotle's conclusion of his solution to the eleventh aporia and his elaboration on his solution to this aporia using his well-known thesis that *to on* and *to hen* are said in many ways, and in particular they are said along with the categories. I will say more on why I think that both 'paragraphs' in T10 express related ideas and they together conclude the discussion in Chapter 2 but let me first point out that the two 'paragraphs' in T10 express different ideas.

In the first 'paragraph' of T10, we have a faithful summary of Aristotle's preceding solution to the eleventh aporia and his elaboration on that solution. We are told that "in every genus" *to hen* is something whose nature is not to be one but something else. And we are told that "just as in the colors we should seek the one itself to be some one color, in the same way also in the

⁶¹¹ More on this, see Revie Netz, "On the Aristotelian Paragraph," *Proceedings of the Cambridge Philological Society* 47 (2001): 211–32.

⁶¹² See Iota 1 1052a34-b3 for another example of a (*men oun... de...*) *de...* construction where *men oun... de...* introduce related but different ideas summarizing or concluding the previous discussion and the second *de* introduces the next discussion. By contrast, it is often the case that a single *men oun...* introduces a summary or a conclusion of the previous discussion and the next *de...* introduces the next discussion (as in Iota 3 1054b22-3).

substances [we should seek] the one itself to be some one substance.” It is clear that Aristotle’s statement “in the colors we should seek the one itself to be some one color” is a reference to his preceding claim that *to hen* in colors is the white. So, Aristotle affirms here that he still looks for *to hen* as something which is one *qua* unit₁. And Aristotle says explicitly here that this way of understanding *to hen* must also hold in the case of the substances. Moreover, Aristotle claims in this paragraph that this way of understanding *to hen* must hold “in every genus.” As I explained above, it seems that we cannot find something which is one *qua* unit₁ in *some* genera in some accidental categories, e.g., the genera of character states responding to threatening situations under the category of quality, and it seems that we cannot find something which is one *qua* unit₁ in *any* genera in the category of substance. So, as I explained above, these problems emerge from Aristotle’s elaboration on his solution to the eleventh aporia presented in Iota 2 before T10, and the same problems also emerge from Aristotle’s summary of this passage in the first ‘paragraph’ of T10.

In the second ‘paragraph’ of T10, Aristotle clearly presents a version of the being-unity equivalence argument he presents in Γ .2. As Castelli points out, the Iota 2 version of the argument “reconsiders all points touched upon [in the Γ .2 version], with some variations in the use of language and arguments.”⁶¹³ I will say more about the details of the Iota 2 version of this argument in comparison with its Γ .2 version below, but I do not see any reason to think that in the Iota 2 version of the argument Aristotle has a different understanding of the senses of being and the one that are presumed in this argument and what is the conceptual relation between these senses of being and the one from their understanding in the Γ .2 version of the argument. But if this is the case and the same sense of the one is meant in both versions of the argument, *to hen* in the Iota 2 version of the being-unity argument cannot be *to hen* in the sense of something which is one *qua* unit₁ in a genus but it seems from the development of Aristotle’s discussion building up to the Iota 2 version of the being-unity argument that he suggests this.

Recall that the Γ .2 version of the being-unity argument reproduced above as T1 has the conclusion that there are as many kinds of being as there are of the one. This conclusion is not stated in the Iota 2 version of the argument (i.e., the second ‘paragraph’ in T10) as a conclusion but the basic idea is conveyed as a specification of the way in which *to hen* and *to on* signify the

⁶¹³ See Castelli, *Problems and Paradigms of Unity*, 208-9.

same thing, namely, in T10 (2)-(3). This conclusion is also stated further above in Iota 2 at 1053b25 (quoted as part of T8 above). The main premise in the Γ .2 version is stated in T1 (1) and explained in T1 (2)-(4). This premise states that *to on* and *to hen* are the same by following each other, i.e., being coextensive, without being denoted by the same *logos*. As I explained above, the text of T1 (2) has corruptions and the two main textual traditions of the *Metaphysics* have variant readings of two passages in T1 (2). Nonetheless, it is clear from either reading of T1 (2) and from T1 (3)-(4) which does not have any major textual corruption that, e.g. “one human [*heis anthrōpos*]” and “human” are the same, and “human that *is* [*ōn anthrōpos*]” and “human” are also the same, and the addition of “one [*heis*]” or “*is* [*ōn*]” to “human” does not denote anything other than “human;” hence, “*to hen* is nothing beyond *to on*.” As I argued above, since we cannot talk about a complete identity in meaning (since being and the one are not denoted by the same *logos*), and since we do not deal with an accidental coextensiveness, we must understand these claims that, e.g., “*heis* human” or “*ōn* human” does not denote anything other than what “human” denotes to mean that “one” and “being” refer to the nature or the essence of the human while describing in different ways. I supplied above such an understanding of being and the one from Aristotle’s ‘fresh’ inquiry into substance in *Met. Z.17* and H. The second premise in the Γ .2 version of the being-unity argument does not add much to the first premise to get the conclusion that there are as many kinds of being as there are of the one; rather, the second premise seems to confirm or underline the senses of being and the one presumed in the first premise, namely that each thing *is* because of its essence and each thing is one because of its essence, and its essence simply *is* and its essence is simply one without needing a further cause for its being or unity.

It seems that the Iota 2 version of the argument (the second ‘paragraph’ in T10) just presents the first premise and its justification in the Γ .2 version of the argument, i.e., T1 (1), (2)-(4). In T10 (1), Aristotle states, “the one and being somehow signify the same thing” and in T10 (2), (3), and (4) he supplies specifications or explanations for this claim mainly in the form of (*tō(i)*) + infinitive constructions. In T10 (2)-(3), he adds a specification to the way in which *to on* and *to hen* signify the same thing “somehow [*pōs*];” accordingly, Aristotle implies that *to hen* is not found just in one single category as a whole, but it is found in every category; so, *to hen* “follow[s] the categories in the same number of ways.” In this respect, *to hen* is just like *to on*. So, it seems that in the context of the Iota 2 version of the being-unity equivalence argument, we take it to be a given that *to on* is said in many ways as divided into the categories and we should

not look for *to on* in a single category (say the category of substance) but it is in all the categories; similarly, we are told that we should not look for *to hen* in a single category but it is in all the categories. So one way in which we can specify the claim that *to on* and *to hen* somehow signify the same thing is by saying that both *to on* and *to hen* apply to things not in a single category but to thing in all the categories. Yet this cannot be all there is to Aristotle's claim that *to on* and *to hen* signify somehow the same thing; for the sake of argument, let's assume that there are accidentally brown and rash individuals in every felid species (cats, tigers, etc.). According to our assumption, being brown and being rash is found in every felid species, but these are still accidental features. Based on this fact we would not go so far as to claim that being brown and being rash signify the same thing in the way in which *to hen* and *to on* signify the same thing. Aristotle's emphasis on *to hen*'s not falling into a single category alone (say the category of substance) but that we can find *to hen* in every category seems to be continuation of his interest in the preceding elaboration on his solution to the eleventh aporia that the essence of *to hen* is not to be one, but in each category and in every genera under each category, we find something with a nature different from just being one that is *to hen*; Aristotle expresses this clearly above in Iota 2 at 1053b24-8 (reproduced as T8), using the idea that *to on* and *to hen* are said in an equal number of ways, following the categories.

T10 (4) seems to express the full force of the claim in T10 (1) that *to on* and *to hen* somehow signify the same thing; in fact, T10 (4) is quite similar to the explanation in T1 (2)-(4) of the first premise in the Γ.2 version of the argument stated in T1 (1), namely, that *to hen* and *to on* are the same in the sense of being coextensive without being denoted by the same *logos*. There is more to Aristotle's point in T1 (2)-(4) but the main idea there is that the addition of "one [*heis*]" or "is [*ōn*]" to, e.g., "human" does not denote anything other than what "human" denotes and hence *to hen* is nothing beyond *to on*. Aristotle makes a similar point in T10 (4), even using the same example. Let me reproduce T10 (4) for ease of navigation:

T10 (4) *Met.* Iota 2 1054a16-9

... [4] [a] τῷ μὴ προσκατηγορεῖσθαι ἕτερόν τι τὸ εἰς ἄνθρωπος τοῦ ἄνθρωπος [b] ὥσπερ οὐδὲ τὸ εἶναι παρὰ τὸ τί ἢ ποῖον ἢ πόσον [c] καὶ τὸ ἐνὶ εἶναι τὸ ἐκάστῳ εἶναι.

... [4] from [a] not being predicated as another thing in addition, [e.g.,] "one human" [is not predicated as another thing in addition] of human, [b] just as being [*to einaí*] is not

beyond substance [*to ti*] or quality, or quantity either, [c] and to be one [*to heni einai*] is just to be each thing [*to hekastō(i) einai*].

So, (a) when we predicate “one human” of something (i.e., of a human), nothing else is predicated in addition than what is predicated when we simply predicate “human” of her. This is (b) just like the case with being (*to einai*) because being is not “beyond substance, or quality, or quantity either” because the relevant sense of being has the categories as its subsenses and there is no being in general in this sense which is not one of the categories. More specifically, we could also say, as in the Γ.2 version of the argument, that when we predicate “human that is [*ōn anthrōpos*]” of a human, nothing else is predicated in addition than what is predicated when we simply predicate “human” of her. So, (c) “to be one [*to heni einai*] is just to be each thing [*to hekastō(i) einai*],” i.e., that by virtue of which X is said to be one (in the relevant sense) is nothing but that by virtue of which X is said to *be* (what it is).

So, the second ‘paragraph’ in T10 more or less presents the same basic idea presented in the being-unity equivalence argument in Γ.2. Moreover, Aristotle seems to be still taking *to hen* to mean the One as implied by his solution to the eleventh aporia and recall that in his examples in his elaboration on his solution to the eleventh aporia above in Iota 2, Aristotle identifies the relevant One as something which is one *qua* unit₁ in relation to a genus. So, in each genus, we should look for a species as our measure such that each of the other species in this genus is measured as a number of our measure, and this measure is *to hen* that we are seeking in relation to this genus. For example, each intermediate color can be considered to be measured as a ratio of the white to the privation of the white, i.e., the black, and the white is *to hen* that we are looking for in the genus of colors. As I pointed out above, Aristotle seems to still have in mind something which is one *qua* unit₁ for a genus when he talks about *to hen* in the first ‘paragraph’ of T10 which summarizes the previous discussion. So, if Aristotle meant a different sense of *to hen* in the Iota 2 version of the being-unity argument, i.e., in the second ‘paragraph’ of T10, he should have said that explicitly because otherwise, he is setting his readers up for a confusion. Moreover, the conclusion of the Γ.2 version of the being-unity argument is not only expressed in T10 (2)-(3), but it is more directly expressed above in Iota 2, namely at 1053b23, which is quoted as part of T8 above. Recall that T8 comes right after Aristotle’s argument that Plato’s and the Pythagoreans’ side to the eleventh aporia is not right because *to hen* and *to on* are the most

universal predicates and as such they cannot be substances of things. T8 is the beginning of Aristotle's elaboration on the other side of the aporia, namely that *to hen* and *to on* have natures different from just *being* or from just being one. For this purpose, he first invokes his thesis that *to on* and *to hen* are said in an equal number of ways, following the categories, and we should seek as *to hen* (and *to on*) a regular thing (or a finite number of things) with its own nature in each category. Then Aristotle gives his four examples to illustrate how we should look for *to hen* in a genus. In each of these examples, what is said to be *to hen* is one *qua* unit₁ for the relevant genus. In other words, Aristotle's thesis that being and the one are said in an equal number of ways, following the categories is not external to his elaboration on his solution to the eleventh aporia; in fact, he needs this thesis to specify his own position and distinguish it from the natural philosophers because, e.g., Empedocles might say that there is only a single such One for everything, which is love; by contrast, drawing on his thesis that being and unity are said in many ways following the categories, Aristotle argues that there cannot be a single One for everything in all the categories; at the very least, there must be a One in each category. In fact, his examples illustrate that we should be more specific in our inquiry and look for a One in a genus under a category instead of looking for the One for the whole category.

So, Aristotle needs the thesis that being and unity are said in the same number of ways following the categories to specify his position on the eleventh aporia and even though he is on the same side with the natural philosophers against Plato and the Pythagoreans, he needs this thesis to distinguish his own position from the views that the natural philosophers seem to be committed to on this issue. So, it would make very good sense if Aristotle thought that he should say a bit more to explain this thesis in his conclusion of his discussion of the eleventh aporia in Iota 2. This is why I think that the 'second' paragraph of T10, i.e., the Iota 2 version of the being-unity equivalence argument is part of the conclusion of the preceding discussion of the eleventh aporia along with the first 'paragraph' of T10. This makes it imperative for Aristotle to clarify that *to hen* in the Iota 2 version of the being-unity equivalence argument is not what he means by *to hen* right above, i.e., something which is one *qua* unit₁ for a genus because this sense of unity cannot be the sense of unity presumed in the being-unity equivalence argument. This is because no genus of being should be left out of the being-unity equivalence argument but as I explained above, we do not seem to be able to find *to hen* in this sense (i.e., something which is one *qua* unit₁) in some genera in the accidental categories, and in *no* genus in the category of substance.

However, Aristotle explicitly mentions “human” and “one human” as an example in the Iota 2 version of the being-unity argument; so clearly, we want this argument to apply to substances too, but as I explained above, I cannot think of a way to understand a substance species to be a measure of the other species under the same genus such that each of the other species is literally measured as a number or ratio of the species we adopted as our measure. So, taking the one *qua* unit₁ as the sense of *to hen* presumed in the being-unity equivalence argument is not coherent.

As I stated above, I do not see any reason to assume that Aristotle has in mind different senses of being and unity in the Iota 2 version of the being-unity equivalence argument than those in the Γ.2 version of this argument. Recall that I argued above that in the Γ.2 version of the argument, according to the relevant senses of being and unity, each thing is said to *be* and it is said to be one because of its essence but when we say that it *is* or when we say that it is one, we are not describing its relation to its essence in the same way. I suggested above that it does not seem to be clear whether, for Aristotle, saying that “X *is*” (in the sense relevant for the being-unity equivalence argument) expresses anything more specific than the fact that X has its essence. Even if Aristotle thought that it expresses something more specific than the fact that X has its essence, he does not elaborate on it.

It seems that Iota 2 provides clues for spelling out what Aristotle has in mind about what we express in addition to the fact that X has its essence when we say that “X is one” (in the sense relevant for the being-unity equivalence argument). I talked about the difficulties with taking the sense of unity *qua* unit₁ from Iota 2 to be the sense of unity presumed in the being-unity equivalence argument. So, the sense of unity presumed in the being-unity equivalence argument cannot be the sense of unity *qua* unit₁. That said, even though I do not think that Aristotle says enough for us to determine precisely which sense of unity is presumed in the being-unity equivalence argument, there is a good chance that Aristotle took the sense of unity presumed in the being-unity equivalence argument to be unity *qua* the measure of a genus, but according to an understanding of being a measure different from the understanding of being a measure he presents in Iota 1 and uses in his examples in Iota 2. Two pieces of evidence together support my interpretation. First, I will explain below that the sense of unity *qua* a measure according to this other understanding of measure works well in the being-unity equivalence argument. Moreover, my interpretation provides an explanation of why Aristotle conflated the sense of unity presumed

in the being-unity equivalence argument with the sense of unity *qua* a measure according to the understanding of measure presented in Iota 1 and employed in the examples in Iota 2. According to my interpretation, Aristotle was susceptible to this conflation because after all, the sense of unity *qua* a measure according to one understanding of measure is much more akin to the sense of unity *qua* a measure according to another understanding of measure than the other senses of unity.

Recall that according to the understanding of measure presented in Iota 1 and employed in Iota 2, a species (or a finite number of species) in a genus is the measure for the other species in the genus such that each of the other species is measured as a number or a ratio of the species which is taken as the measure for this genus. For example, in the genus of articulate sounds, the species of phonemes are the measures and each of the other species of articulate sounds is measured as numbers of phonemes. More concretely, the type utterance “banana” is measured as six phonemes, or more specifically as three (type utterance) “a”s, two (type utterance) “n”s, and one (type utterance) “b”. By means of this, we also say that a token utterance of “banana” (i.e., my particular utterance of “banana” now) is measured as three “a”s, two “n”s, and one “b”.

Aristotle states at *Met. N.1* 1087b33-4 that “it is clear that *to hen* signifies a measure” and at 1087b34-8a8 he goes on to summarize his account of the one *qua* the measure of a genus in Iota 1 and his relevant claims and examples in Iota 2. So, he gives examples of the one *qua* measure of a genus according to the understanding of measure presented in Iota 1 and employed in Iota 2: *diesis* is the one in musical concord (*harmonia*), an inch (*daktulos*) or a foot or something of this sort in magnitude etc. He mentions that “in every case [the one] is something else which is a subject,” i.e., the one is not something whose nature is to be one but it is something of a different nature of which, as a subject, the one is said. He says that not only in these examples but in general we should look for the one in this way, and the one is “a quality in the qualities, a quantity in the quantities... as the one by itself [*kath’ hauto*] is not a substance.” The one as “the measure is undivided; some [are undivided] in form [*kata to eidos*], while others [are undivided] to perception [*pros tēn aisthēsin*],” i.e., the relevant perceptive faculty cannot discern things smaller than them or cannot discern the differences between them and the perceptible things smaller than them. Finally, a number is “a measured multitude and a multitude of measures,” and

in this respect, the one is not a number (since it is not a multitude) but the measure and the principle of number.

After recapitulating these general aspects of his discussion of the one *qua* the first measure of a genus in Iota 1 and Iota 2 and giving examples of the one *qua* the first measure of a genus according to the particular understanding of measure in Iota 1 and 2 at 1087b34-8a8, Aristotle introduces a different understanding of measure without explicitly highlighting that he starts to present a different understanding of measure (and hence, in a way, a different sense of unity *qua* the measure of a genus according to this new understanding of measure):

T11 *Met.* N.1 1088a8-14

[1] δεῖ δὲ αἰεὶ τὸ αὐτό τι ὑπάρχειν πᾶσι τὸ μέτρον, οἷον εἰ ἵππος τὸ μέτρον, ἵππους καὶ εἰ ἄνθρωπος, ἄνθρωπους. εἰ δ' ἄνθρωπος καὶ ἵππος καὶ θεός, ζῶον ἴσως, καὶ ὁ ἀριθμὸς αὐτῶν ἔσται ζῷα. [2] εἰ δ' ἄνθρωπος καὶ λευκὸν καὶ βαδίζον, ἥκιστα μὲν ἀριθμὸς τούτων διὰ τὸ ταὐτῷ πάντα ὑπάρχειν καὶ ἐνὶ κατὰ ἀριθμόν, ὅμως δὲ γενῶν ἔσται ὁ ἀριθμὸς ὁ τούτων, ἢ τινος ἄλλης τοιαύτης προσηγορίας.

But the measure must always be some same thing belonging to all, e.g., if the measure is horse, [it measures] horses, and if [the measure] is human, [it measures] humans. But if it is human, horse, and god [that are measured], [the measure] is presumably animal, and their number will be animals. On the other hand, if it is human, white [*leukon*], and walking [*badizon*] [that are measured], there is a number of these least of all because all of them belong to something which is one and the same in number; nevertheless, the number of them will be a number of genera, or [a number] of some other name [*prosēgoria*] of this sort.

As Aristotle puts in T11 (1), according to this understanding of a measure, the measure belongs to everything in the genus of which the is the measure. So, when we measure individual humans, human (i.e., the human kind) is our measure so that using the human kind which belongs to all the individual humans, we can say that, e.g., Socrates and Plato are *two humans*, or that using the horse kind which belongs to all the individual horses, we measure this group of individual horses as *five horses*. If we want to measure either the human kind, the horse kind, and the god kind, or a group of an individual human, an individual horse, and an individual god, our measure would

be the animal kind because the animal kind belongs to them all and we would measure this group as *three animals*.

The example in T11 (2) is not as easy to interpret. In this passage, Aristotle seems to consider two different ways of interpreting *anthrōpos*, *leukon*, and *badizon*. First, we can take these words to talk about a human individual, a white (thing), and a walking (thing); in this case, *anthrōpos*, *leukon*, and *badizon* can refer to the same subject;⁶¹⁴ if so, a human individual, a white thing, and a walking thing would be the same thing which is one in number. However, since one is not a number for Aristotle (because for him a number is a multitude of units; see, e.g., Iota 1 1053a27-30, N.1 1088a4-8), we cannot measure *anthrōpos*, *leukon*, and *badizon* as a *number* of something on account of their common subject which is *one and the same in number*. Perhaps the more interesting case T11 (2) covers is when *anthrōpos*, *leukon*, and *badizon* pick out species in different categories (the human kind in the category of substance, white as a kind of color in the category of quality, and walking as a kind of locomotion in the category of action (*poiein*)). In this case, the measure of *anthrōpos*, *leukon*, and *badizon* would be *genos* or “some other name [*prosēgoria*] of this sort,” i.e., kind, class, type, or some other term like these, because the species in different categories do not fall under any single genuine genus (because the highest genuine genera are the categories themselves and there is no genus that comprehends multiple categories), but in a way, we can measure the human kind, the white kind, and the walking kind as *three kinds* or *types*, or *classes* or something like this.

So, the cases covered in T11 (1) seem to exemplify the core sense of the one *qua* the measure of a genus according to this second understanding of measure, as in these cases we have a genuine kind which belongs to everything it measures. By contrast, T11 (2) seems to address a liminal case of this sense of the one, as in this case we either do not have *multiple* things that can be measured as a *number* of something, or we have multiple things under different categories which are not under any genuine kind.

⁶¹⁴ It is worth noting that they are not necessarily predicated of the same subject as the wording in T11 (2) might be taken to suggest. Nonetheless, if “human”, “white”, and “walking” are predicated of different subjects, since they will be predicated of individual substances, the measure of a human, a white thing, and a walking thing will be the measure of the particular substances “human”, “white”, and “walking” are predicated of (say a human, a white cat, and a walking zebra). So, this case would turn out to be one of the cases presented in T11 (1).

Let me call what is one *qua* a measure according to this second sense of measure “one *qua* unit₂.” This sense of measure clearly differs from the previously discussed sense of measure according to which, e.g., the phonemes are the measures for the articulate sounds. There are two differences between these two understandings of measure. First, according to the first sense, the measure is not predicated of the things it directly measures, whereas according to the second sense, it is. Phoneme, for instance, is not predicated of the articulate sounds it measures (the word “banana” is not a phoneme); human, on the other hand, is predicated of the human individuals it measures. Second, and more importantly, according to the first sense of measure, the measure X measures *each member* of the kind it is the measure of *individually* as a number of X, but according to the second sense of measure, the measure X measures *several members* of the kind it is the measure of *together* as a number of X. For example, the word “banana” is measured as six phonemes, but a group of individual humans are measured together as six humans.

As explained above, according to the second sense of measure, the measure is the shared kind of the things which are measured but since there are no free-floating universals for Aristotle, the measure in this sense will also be in a way each individual that is measured. For example, the human kind is the measure of the human individuals but there is no free-floating human kind; rather, Socrates, Plato etc. are said to be human on account of their essence (and not on account of some accident they might have). So, we can also say that Socrates is *one human* in the sense that he has the *human essence* and he is *not multiple qua* human; insofar as Socrates has the human essence and he is not multiple *qua* human, he can be *generally* treated as the measure to measure other human individuals. In fact, since there is no universal human kind separate from the individual human beings, the measure of the human individuals according to the second sense of measure will necessarily be some particular human being, though treated not as this particular human being but generally as something with the human essence.

Recall that we are looking for a sense of unity that works well in the being-unity equivalence argument. As argued above, each thing, X, is said to *be* and to be one by virtue of its essence according to the senses of being and unity presumed in the being-unity equivalence argument. Yet when we say “this thing is one,” we describe the fact that X has its essence but we describe this fact in a way different from the way in which we describe this fact by saying “X *is* (the sort

of thing it is).” The sense of unity *qua* unit₂ would work well in the being-unity argument because whatever we pick in any of the categories, say X, it is true that X is one *qua* unit₂ insofar as it is considered as something with the essence of X and not multiple *qua* X. In other words, an individual human being is one as the measure of all individual humans according to the second sense of measure, not insofar as this individual human being is treated as the particular thing that he is, but it is one in this sense insofar as he is generally treated as *one human*, i.e., something with the human essence that is not multiple *qua* human.

So, the sense of unity *qua* unit₂ fares much better than the sense of unity *qua* unit₁ as the sense of unity presumed in the being-unity equivalence argument. It seems that Aristotle likely thought that the relevant sense of unity in the being-unity equivalence argument was one *qua* unit₂ at least for substances and presumably also for the other categories. Since Aristotle does not clearly distinguish the two models of measure distinguished above, it would not be surprising if he conflated one *qua* unit₁ with one *qua* unit₂ or perhaps he thought that it was permissible to treat them as the same sense of unity and use them in each other’s place.⁶¹⁵ This would partially explain why Aristotle gives examples of things which are one *qua* unit₁ (e.g., the white in the genus of colors) in Iota 2 where we expect him to give examples of things that are causes of unity for a genus and of a sense of unity that can work in the being-unity equivalence argument. Besides, Aristotle might have had a positive theoretical interest in giving examples of things which are one *qua* unit₁ for a genus when we expect him to give an example of the One for the things in this genus in the sense of the cause of unity for them. As I explained above, it seems that the relevant sense of the One in the eleventh aporia minimally has it that the One is a cause of unity for the things in the relevant genus. I also explained that things which are one *qua* unit₁ for a genus are more like material principles for the things in this genus, and even if we might call them Beings for the things in this genus, i.e., causes of being for the things in this genus, it seems harder to make sense of calling the material principles the cause of unity for the things they are the material principles of. For example, we can say that in a sense the phonemes “a” “b”

⁶¹⁵ Aristotle employs both models of measure without distinguishing them also in his discussion of time in *Phys.* IV, more specifically at *Phys.* IV.14 223b13-5: “... each thing is counted [*arithmeitai*] by some one thing of the same genus [*heni tini suggenei*], units [i.e., a number] by a unit, horses by a horse, and in this way also time is measured by a determinate time...” A number is measured (or counted) by the unit, and time is measured by a determinate time according to the first sense of measure (i.e., as the phonemes measure the articulate sounds), while horses are measured by a horse according to the second sense of measure. Also see IV.12 220b1-23 where Aristotle mentions that the number of horses is measured by one horse.

and “n” are among the causes of being for the word “banana,” but it seems harder to make sense of the claim that these phonemes are among the causes for the fact that “banana” is one word and not a mere heap of the phonemes it is composed of. I argued above that Aristotle seems to think that the essence or the form of a composite thing, i.e., its substance, is the cause of its being (the sort of thing it is) and the cause of its unity (i.e., the fact that it is a genuinely one thing and not a mere heap of components). However, it is scientifically more interesting to seek wider causal links. So, instead of inquiring into, e.g., the proximate matters of humans, we can take a step back and inquire into the commonalities among the matters of animals. We can take a further step back and inquire into the commonalities among the matters of all living beings, and further more, of all corporeal things. So, when we are interested in why, e.g. the color brown *is* (what it is) and is one thing (instead of a mere heap of the white and the black it is composed of), we would probably cite its form or essence, i.e., *the ratio* of white to black, but if we want to inquire into the principles that are common to all the colors, we should look for the ‘material components’ of all colors, i.e., the white and the black, because each intermediate color is distinguished by its own distinct ratio so that what is responsible directly for the being and unity of a particular kind of color, i.e., its form will not be a principle shared by all colors.⁶¹⁶ After all, Aristotle’s model in his response to the eleventh aporia, i.e., the earlier natural philosophers, seek such very general principles shared by everything. So perhaps his interest in pursuing principles with larger domains of causal influence compounded with his lack of clear distinction between the two models of measure led him to give examples of things which are one *qua* unit₁ for a kind

⁶¹⁶ Compare *Met.* A.4 1070b18-21 where white, black, and surface are given as an example of the three ‘internal’ principles of perishable things, i.e., form (*eidōs*), privation (*sterēsis*), and matter or subject. Aristotle does not mean here that white is the form or the essence of every color; rather, he means that we can understand a color as the combination of the two opposites (positive = white, privative = black) in a receptive subject (surface). A few lines above, Aristotle mentions that in perceptible bodies we have as our principles the hot as the form and the cold as the privation and a subject which is potentially both, and out of these three principles, perceptible substances like flesh and bone are produced (1070b10-6); clearly, the essence or the form of flesh or bone would not simply be the hot but rather it would be the ratio of the hot and the cold (see, e.g., *DA* III.4 429b15-6 where Aristotle seems to suggest that flesh is composed of the hot and the cold but what the flesh is is the ratio (*logos*) of the hot and the cold). That said, as I pointed out in Footnote n.607 above, Aristotle seems to think that the differentiae, e.g., of the intermediate colors are intermediate to the differentiae of the primary contraries in this genus, i.e., the differentiae of the white and the black; as I explained above, this seems to mean that if the red is produced from two units of white and three units of black, and the differentiae of the white and the black are dilating and contracting, the red would be defined as a color (genus) which is two units dilating and three units contracting (differentia) (or something along these lines). Or perhaps we can define the red using its substrate as follows: the red is the disposition of an opaque surface to reflect rays (genus) by dilating them two times and constricting them three times (differentia) (or something along these lines). In this respect, it seems that the differentiae of the primary contrary species in a genus (e.g., the white and the black) determine the differentiae of the intermediate species in this genus. So, it is not entirely correct to understand the white and the black as the ‘material’ principles of the intermediate colors.

in Iota 2 where it would make better sense if he gave examples of things which are one *qua* unit₂ for a kind both as the sense of unity presumed in the being-unity argument and as the One for the things in this kind in the sense of their cause of unity.

Whether I am right that Aristotle meant unity *qua* unit₂ in the being-unity equivalence argument or not, it is clear that a fair reading of Iota 2 can lead one to think that Aristotle identifies the sense of unity presumed in the being-unity equivalence argument to be unity *qua* unit₁ but I explained two problems with identifying this sense of unity as the sense of unity presumed in the being-unity equivalence argument: it seems that we cannot find something which is one *qua* unit₁ for *some* genera in some of the accidental categories, and it seems that we cannot find something which is one *qua* unit₁ for *any* genus in the category of substance. However, the being-unity equivalence argument does not seem to leave out any genus of being, and substances provide the primary examples of this argument; at the very least, the only explicitly mentioned example in both versions of the argument is about a substance (namely, human).

So, a fair and charitable reader of Aristotle could reasonably assume that in Iota 2 Aristotle identifies the sense of unity that is presumed in the being-unity equivalence argument to be the sense of unity *qua* unit₁. If this reader is also an Aristotelian who thinks that Aristotelian philosophy is philosophy, i.e., the true theory of reality, he would assume that Aristotelian philosophy sometimes requires correcting or improving the apparent meanings of some of Aristotle's claims. Given the problems with identifying the sense of unity *qua* unit₁ as the sense of unity presumed in the being-unity equivalence argument, such a philosopher would think that despite the apparent meaning of what Aristotle seems to be suggesting in Iota 2, we should deny that the sense of unity presumed in the being-unity equivalence argument is unity *qua* unit₁; in that case, this philosopher would feel the need to come up with an account of the relevant sense of unity which applies to all beings and does not leave any genus under any category out of its scope and according to which we say something about the essence of X when we say that X is one.

I think that this was the case with al-Fārābī. The situation was even worse in al-Fārābī's case because he did not have access to *Met. N*⁶¹⁷ to be able to consider whether Aristotle could mean a

⁶¹⁷ See Footnote n.137 in Chapter 1 Section 2.

different sense of measure for *to hen* in the being-unity equivalence argument to be one *qua* the measure of a kind.⁶¹⁸ Moreover, as explained in Appendix: Iota 2 version of the being-unity equivalence argument, some details in Uṣṭāth's translation of the Iota 2 version of the being-unity equivalence argument makes it more difficult to understand Aristotle's point in this version of the argument. So, if al-Fārābī had access only to Uṣṭāth's translation of the Iota 2 version of the being-unity equivalence argument, he would have found it even more difficult to understand what Aristotle was talking about in the Iota 2 version of the being-unity equivalence argument and how this version of the argument related to the preceding discussion of *to hen* as something which is one *qua* unit₁ for a genus.

In his commentary on *Met. Iota*, Averroes cites excerpts from a different Arabic translation of *Met. Iota*, and this translation was possibly by Ishāq.⁶¹⁹ Even if we assume that this other translation faithfully represented the Greek text of the Iota 2 version of the being-unity equivalence argument, and that al-Fārābī had access to this translation, for the reasons presented above, al-Fārābī could think that in Iota 2 Aristotle suggests that *to hen* in the being-unity equivalence argument is one *qua* unit₁ for a genus, but as explained above, this view has clear problems.

So, one way or another, al-Fārābī probably thought that he could not understand the apparent account of the sense of unity presumed in the being-unity equivalence argument in Iota 2, and this could give him enough motivation to spell out a sense of unity and a corresponding sense of being that work well in the being-unity equivalence argument. As I explained in Section 3.b above, a reasonable reading of the Γ.2 version of the argument along with what one can grasp about being and unity from Aristotle's 'fresh' inquiry into substance in Z.17 and H suggests that for any thing in any of the categories, its being and its unity mean a certain description of the essence of this thing. As explained in Section 3.b, Aristotle does not seem to specify how we

⁶¹⁸ As mentioned in Footnote n.615 above, Aristotle employs the second model of measure according to which, e.g., a horse is the measure of horses in passing at least in two passages in *Phys.* IV.12 and IV.14, but in these passages Aristotle's focus is not to discuss the one and the sense of the one *qua* measure of a kind as it is in the *Met.* N.1 passage discussed above; so it would be more cognitively taxing for someone reading Iota 2 to remember that Aristotle also says that a horse is a measure of horses in two passages in *Phys.* IV and to infer from this that Aristotle might have in mind another understanding of measure, and finally to think that using this other understanding of measure, we can formulate a sense of unity *qua* measure of a kind that works better in Iota 2 than the actual examples Aristotle gives in Iota 2 of things which are one *qua* measure of a kind according to a different understanding of measure (e.g., the phonemes are measures of the articulate sounds).

⁶¹⁹ See Bertolacci, *On the Arabic Translations*.

describe the essence of X when we say that X *is* (what it is) by virtue of its essence. I suggested above that it is not unlikely for Aristotle to think that when we say that X *is* one by virtue of its essence, we mean something along the lines of saying that by virtue of its essence, X is *one* instance of its kind so that insofar as X is treated as something having that essence, X can be used generally as a unit for measuring things in its kind. That said, as I explained above, this is by no means clear from Iota 2, and it is unlikely that this is how al-Fārābī would have understood what Aristotle intends to be the sense of unity that is presumed in the being-unity equivalence argument from Iota 2. Given the importance of the being-unity equivalence argument for the overall architecture of the science of metaphysics and the presentation of this science in Aristotle’s work called *Metaphysics*, al-Fārābī would have felt the pressure to come up with an idea of unity and a corresponding idea of being that do not commit one to adding anything in reality to the essences of things but at the same time describing their essences in different ways agreeing with the meanings of the terms “being” and “one.”

As mentioned in Section 3.a above, al-Fārābī seems to have developed the sense of unity by virtue of circumscription by a quiddity from the senses of unity by virtue of physical circumscription (i.e., by an extremity or by a place), and from this, the sense of being by virtue of circumscription by an extramental quiddity. It is conceivable that his motivation to find senses of being and unity that work well in the being-unity equivalence argument led him to develop the sense of unity by virtue of circumscription by a quiddity from the physical cases and then extend this further into a corresponding sense of being.

One problem with this proposal is that Aristotle explicitly says in the Γ.2 version of the being-unity equivalence argument, more precisely in T1 (1), that *to hen* and *to on* are the same by being coextensive but they are not denoted by the same *logos*. However, if we say that something is one and it *is* because it is circumscribed by (its extramental) quiddity, it seems that these senses of being and unity have the same *logos*. I think that al-Fārābī’s eagerness to formulate the senses of being and unity required for the being-unity argument that are necessarily coextensive because of the essence of the thing which is said to *be* and is one in these senses led him *to some extent* to overlook that detail in the Γ.2 version of the argument that the relevant senses of being and unity do not have the same *logos*. That said, I think this is an omission *only in part* because as I explained in Section 3.a above, the idea of circumscription is central to this sense of unity, but

the idea of having an extramental quiddity, instead, is central to the corresponding sense of being, and al-Fārābī himself seems to be aware of this too given that he sometimes lets himself to say that something *is* (*mawjūd*) in this sense because it *has* an extramental quiddity while we expect him to say that it *is* because it *is circumscribed* by an extramental quiddity. As I put it above, in the account of this sense of being, “circumscription [*inḥiyāz*]” seems to mean nothing more than a fuzzy sense of possession, whereas in the account of the corresponding sense of unity, “circumscription” preserves its distinct sense of containing something and separating it from others.

Conclusion

In this chapter, I discussed one of the major differences between Aristotle’s and al-Fārābī’s accounts of unity, namely, al-Fārābī’s senses of unity by virtue of circumscription (*inḥiyāz*) which do not correspond to any of the sense of unity discussed by Aristotle. In the first section, I explained what al-Fārābī means by circumscription and unity by circumscription in general and I spelled out the senses of unity by virtue of physical circumscription (i.e., circumscription by a place (*makān*) or by an extremity (*nihāya*)) and the sense of unity by virtue of circumscription by a quiddity. In particular, I suggested that it seems more likely than the alternative interpretations that when al-Fārābī talks about, e.g., Socrates’ being one by virtue of being circumscribed by its quiddity, he means that Socrates and only Socrates has his own individual quiddity and so that, e.g., Socrates is circumscribed from Plato by Socrates’ own individual quiddity and Plato is circumscribed from Socrates by Plato’s own individual quiddity. In the second section, I discussed some potential sources for al-Fārābī’s idea of circumscription. I argued that the Greek term *perigraphē* (and the related terms) were used by late antique philosophers to express an idea similar to the idea al-Fārābī expresses by *inḥiyāz*. I showed that a number of late antique Greek philosophical texts present the idea of physical circumscription and a few late antique philosophical texts, most importantly a long quote from Porphyry’s lost long commentary on the *Categories* (sc. *Ad Gedalium*) preserved in Simplicius, seem to extend the idea of physical circumscription to non-physical cases. I argued that none of these late antique Greek texts provide so developed an account of unity by virtue of circumscription that would justify us to assume that al-Fārābī took his senses of unity by virtue of circumscription from these sources.

Instead, I suggested that al-Fārābī likely found in some or all of these Greek texts starting-points or confirmations for his ideas of unity by virtue of circumscription by a quiddity. Finally, in the third section, I explained what motivated al-Fārābī to develop his senses of unity by virtue of circumscription and especially his sense of unity by virtue of circumscription by a quiddity and the corresponding sense of being by virtue of circumscription by an external quiddity. Aristotle presents an argument in *Met.* Γ.2 by which he takes himself to establish some sort of a strong connection between being (*to on*) and the one (*to hen*) according to which they are minimally coextensive (as the most general predicates) without being denoted by the same *logos* (not in the way that two words that we would these days call synonymous would be, as in Aristotle’s example of “cloak [*lōpion*]” and “mantel [*himation*]”). By this argument, Aristotle justifies the inclusion of the study of the one and its kinds or *per se* attributes and their opposites in the science which studies being *qua* being. This being-unity equivalence argument has a version in Iota 2. I explained that a fair reading of Iota 2 would suggest that Aristotle identifies the sense of unity presumed in the being-unity equivalence argument with the sense of unity *qua* the first measure of a genus according to the sense of measure according to which, e.g., we say that the phonemes are the measures of the articulate sounds. However, this view generates problems. I suggested that al-Fārābī realized the importance of this argument for the architecture of the science of metaphysics and he found Aristotle’s apparent proposal in Iota 2 to be confusing. So, he felt the need to articulate a sense of unity and a corresponding sense of being which agree with the basic idea drawn from *Met.* Z.17 and H that each thing *is* and is one by virtue of its essence and which satisfy the requirements of the being-unity equivalence argument. In this way, he developed his sense of unity by virtue of circumscription by a quiddity from the cases of physical circumscription and he extended the idea of circumscription by a quiddity to articulate the corresponding sense of being by virtue of circumscription by an extramental quiddity. Finally, I suggested that even though the relevant senses of unity and being seem to have the same *logos*, i.e., circumscription by (an extramental) quiddity, in the case of the sense of unity, *circumscription* is emphasized while in the case of the sense of being, *extramental* is emphasized. So, any real thing X is said to *be* (*mawjūd*) and said to be one (*wāḥid*) in these senses by virtue of the fact that it is circumscribed by its (extramental) quiddity, but when we say that it is *mawjūd*, we highlight the fact that it has an *extramental* quiddity (as opposed to a conceptualized (*mutaṣawwar*) quiddity, i.e., a quiddity in the mind); by contrast, when we say

that it is *wāḥid*, we highlight the fact that its quiddity ‘wraps’ it into one whole (so that it is not a mere heap of its parts but its parts are unified by its quiddity) and its quiddity separates it from other comparable things, and by means of individuation by a quiddity in this way, we can quantify over things (we can coherently refer to one ‘genuine’ thing as a thing of its sort, we can track it across time and in some cases also across possible situations, and we can distinguish it from other comparable things).

Appendix: Availability of *Phys.* IV and commentaries on it to al-Fārābī and al-Fārābī’s engagement with the *Physics*

Al-Fārābī is likely to have had access to most, if not all, of the *Physics* with some commentaries on various parts of it. According to Ibn al-Nadīm’s report in the *Fihrist*, the text of Aristotle’s *Physics* was translated into Arabic along with some commentaries on it (Flügel 250 = Sayyid v.2 166-7). Ibn al-Nadīm’s report on the *Physics* naturally divides into three paragraphs. The first paragraph is titled “The account on [*al-kalām ‘alā*] the *Physics* with the commentary [*bi-tafsīr*] of Alexander, which [sc. the *Physics*] has eight books [*maqālāt*];” the second paragraph is titled “The account on the *Physics* with the commentary of Philoponus [*Yaḥyā al-Naḥwī al-Iskandarānī*];” the third paragraph is titled “The account on the *Physics* with the commentaries by a group of various philosophers [*jamā‘at falāsifa mutafarriqīn*].” The first two paragraphs are apparently reported by Ibn al-Nadīm himself (“*qāla Muḥammad ibn Ishāq*”), while the third paragraph seems to be reported from Ibn Zur‘a⁶²⁰ supplied with a note by Ibn al-Nadīm based on what Ibn al-Nadīm saw in Yaḥyā ibn ‘Adī’s writing.⁶²¹ Ibn al-Nadīm’s accounts on the other books of Aristotle are titled as “*al-kalām ‘alā X*” where X stands for the title of an individual work by Aristotle.⁶²² So, it is curious that while there is a single entry on each of the other works by Aristotle starting with a title in the format “*kalām ‘alā X*,” we have three separate entries on

⁶²⁰ We have ‘*an Abī ‘Alī*’ at the beginning of the third paragraph in Sayyid’s edition v.2 167 line 5 (but not in Flügel); as Sayyid notes, this is found in the margins of the ms.; Ibn al-Samḥ also has the same *kunya* but Ibn al-Nadīm has an entry on Ibn Zur‘a in the philosophy section (Flügel 264 lines 19-27 = Sayyid v.2 204 line 1 – 205 line 2) while the same cannot be said about Ibn al-Samḥ.

⁶²¹ وترجم إبراهيم بن الصلت المقالة الأولى من هذا الكتاب رأيتها بخط يحيى بن عدي (Flügel 250 lines 25-6 = Sayyid v.2 167 lines 9-11).

⁶²² For example, the account on *De Anima* starts with “The account on *De Anima* [*al-kalām ‘alā kitāb al-naḥs*], which has three books [*maqālāt*]” (Flügel 251 line 11 = Sayyid v.2 169 line 6-7). I call these titles because almost in every case, the proper accounts on these works coming after these titles start without a connective particle.

the *Physics* with titles in the same format; this was possibly because of the wealth of the available information on the translations of the *Physics* and the commentaries on it.

It is reported in the first two paragraphs in the *Fihrist* account on the *Physics* that most of Alexander's commentary on the *Physics* and all of Philoponus' commentary were translated into Arabic and apparently the existence of these translations could be verified by Ibn al-Nadīm himself as these two paragraphs seem to be reported by Ibn al-Nadīm himself. In particular, on *Phys.* IV, it is reported in the *Fihrist* that Alexander's commentary on it was in three books (*maqālāt*); the first two books and the third book "until the account on time [i.e., until chapter 10 in the modern editions]" are found (*al-mawjūd*) in Qusṭā ibn Lūqā's translation, and al-Dimashqī's translation of it also appears to be found ("wa-l-ẓāhir al-mawjūd naql al-Dimashqī") (Flügel 250 lines 12-4 = Sayyid v.2 166 lines 8-10).⁶²³ Moreover, Ibn al-Nadīm also reports that Qusṭā translated Philoponus' commentary on the first four books of the *Physics* and 'Abd al-Masīḥ ibn Nā'ima translated Philoponus' commentary on the last four books. Chronologically speaking, al-Fārābī could have access to all these translations.

In the *Fihrist* account on the *Physics*, in the third paragraph titled "The account on the *Physics* with the commentaries by a group of various philosophers," it is mentioned that Porphyry's commentary on the first four books was translated by Basīl (apparently with the text of the *Physics* itself). Ibn al-Nadīm has a list of the names of the translators (apparently from Greek or Syriac) into Arabic towards the beginning of his chapter on philosophy (Flügel 244 lines 1-24 = Sayyid v.2 144 line 2 - 149 line 12) and this account frequently contains some short information on the individuals listed here. In this account, a certain Basīl al-Muṭrān is listed without any information on him being provided (Flügel 244 line 9 = Sayyid v.2 146 line 8), and a bit below, as certain "Bāsīl [*sic*]" is listed and he is said to have "served Dhū al-Yamīnayn [i.e., the Abbasid general Ṭāhir ibn al-Ḥusayn who died in 822]" (Flügel 244 line 13 = Sayyid v.2 148 lines 6-7). The second person clearly lived long before al-Fārābī. If these two are distinct people, and Basīl al-Muṭrān is the Basīl who is reported to have translated the first four books of Porphyry's commentary on the *Physics*, it seems that it was chronologically possible for al-Fārābī to have access to this translation too. This is because we have plenty information in the *Fihrist* on the

⁶²³ It is not clear to me whether it is meant that this translation by al-Dimashqī which "appears to be found [*al-ẓāhir al-mawjūd*]" comprised all of Alexander's commentary on Book IV, or only a part of it.

translators of Aristotle's works in a few decades before and after al-Fārābī's death (950) presumably because of their chronological proximity to the *Fihrist*'s date of composition (completed in 987-8 but it seems that Ibn al-Nadīm has been collecting the material that ultimately makes into the *Fihrist* for quite some time before its completion), and I have not seen any mention of a translator of Aristotle's works under that name in that period in the *Fihrist* or in other sources.⁶²⁴

In the *Fihrist* account on the *Physics*, in the third paragraph titled "The account on the *Physics* with the commentaries by a group of various philosophers," it is also mentioned that Abū Aḥmad ibn Karnīb "commented [*fassara*] on some of the first book [of the *Physics*] and some of the fourth book, namely until the account on time" (Flügel 250 lines 23-4 = Sayyid v.2 167 lines 7-9). As mentioned above, Ibn al-Nadīm reports that Alexander's commentary on *Phys.* IV translated into Arabic by Qusṭā was extant "until the account on time," and that al-Dimashqī seemed to have a translation of it too. So, it is likely that in his own commentary, Ibn Karnīb used the translation of *Phys.* IV "until the account on time" with Alexander's commentary on it. Ibn al-Nadīm reports further down that Abū Aḥmad ibn Karnīb "was among the greatest *mutakallimūn* and he adopted the methods of the natural philosophers [*yadhabu madhhab al-falāsifa al-ṭabī'īyyīn*]... and he was extremely erudite, knowledgeable, and skilled in the ancient natural sciences [*fī nihāyat al-faḍl wa-l-ma'rifa wa-l-iḍṭilāl bi-l-'ulūm al-ṭabī'iyya al-qadīma*]" (Flügel 263 lines 3-5 = Sayyid v.2 198 lines 7-10). Ibn al-Nadīm states in his entry on Abū Bishr Mattā, the senior colleague of al-Fārābī in Baghdad, that among others, Abū Bishr "studied under [*qara'a alā*] ... Abū Aḥmad ibn Karnīb" (Flügel 263 line 24 = Sayyid v.2 201 line 3). So, it is likely that al-Fārābī could have access to the sources that Ibn al-Karnīb used.

Around al-Fārābī's time, philosophers in Baghdad closely associated with him were involved in commentaries on the *Physics*. We have the text of the *Physics* with commentaries on it including by al-Fārābī's senior colleague in Baghdad, Abū Bishr Mattā, and by al-Fārābī's junior colleague,

⁶²⁴ For what it is worth, Ibn Abī Uṣaybi'a mentions in the chapter on the translators of medical works from Greek into Arabic that "Basīl al-Muṭrān translated many books and his translations were rather good [*wa-kāna naqluhu amyāl ilā al-jūda*]" (*A Literary History of Medicine* 9.18), but Ibn Abī Uṣaybi'a does not say anything beyond this that could help us date when this person was active.

or ‘student’,⁶²⁵ Yaḥyā ibn ‘Adī. This compilation, called the Baghdad *Physics*, contains an Arabic translation of the *Physics* with commentaries on it by Abū Bishr, Yaḥyā, Yaḥyā’s student Ibn al-Samḥ, and Yaḥyā’s students’ student Ibn al-Ṭayyib.⁶²⁶ The final form of the compilation of this text was due to Abū al-Ḥusayn al-Basrī who studied the *Physics* with Ibn al-Samḥ apparently up to the middle of the sixth book and the rest with Ibn al-Ṭayyib.⁶²⁷ In addition to Ibn al-Samḥ’s and Ibn al-Ṭayyib’s comments, he also adds comments by Abū Bishr and Yaḥyā. This text contains a translation of the *Physics* itself by Ishāq b. Ḥunayn,⁶²⁸ which is not recorded in the *Fihrist*, but this text also has occasional references to translations by Qusṭā and al-Dimashqī.⁶²⁹ In the Baghdad *Physics*, a version of Philoponus’ commentary (which contains literal translations and summaries as well as loose paraphrases) was appended to Ishāq’s translation of the text of

⁶²⁵ Ibn al-Nadīm mentions that Yaḥyā ibn ‘Adī “studied with [*qara’a*... ‘*alā*]” al-Fārābī (in addition to Abū Bishr and “a number of others [*wa- ‘alā jamā’a*]”) (Flügel 264 line 7 = Sayyid v.2 202 lines 5-6) but the influence of al-Fārābī’s distinctive philosophical views on Yaḥyā seems to be limited.

⁶²⁶ Aristotle et al., *Aristūṭālīs: Al-Ṭabī‘a (Aristotle: The Physics)*, ed. Abdel Rahman Badawi, 2 vols. (Cairo: Al-Markaz al-Qawmī li-l-Tarjama, 2007).

⁶²⁷ More on the history of this text, see S. M. Stern, “Ibn Al-Samḥ,” *The Journal of the Royal Asiatic Society of Great Britain and Ireland*, no. 1/2 (1956): 31–44; this is complemented by Elias Giannakis, “The Structure of Abū al-Ḥusayn al-Basrī’s Copy of Aristotle’s *Physics*,” *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 8 (1993): 251–58.

⁶²⁸ Stern, *Ibn Al-Samḥ* 39; Giannakis, *The Structure* 258.

⁶²⁹ Stern points out that Qusṭā’s translation is noted as a variant at least once (it is on p.220 n.3 in Badawi’s edition; as Badawi indicates, Qusṭā’s translation (*naql Qusṭā*) for the relevant sentence is provided in the margins of the ms. while as noted above, the main translation in the body of the text is by Ishāq). Also, as indicated in the index of names in Badawi’s edition, Qusṭā and al-Dimashqī are mentioned in the body of the Baghdad *Physics*: in his commentary on a textus of the *Physics* including *Phys.* IV.8 216b17-20, Ibn al-Samḥ remarks that the Arabic translation of 216b17-20 “is not found in the translation of Qusṭā and al-Dimashqī, and it is not in the Syriac [translation] either” (380 line 9 - 381 line 2). As also Badawi points out in footnote n.1 on p.380, this passage is excised in Ross’ edition, and according to Ross’ apparatus, this passage is found in all the extant Greek mss. but is not in the Greek commentators (Themistius, Philoponus, and Simplicius). As Badawi reminds the reader in that footnote, and as I indicated above, it is reported in the *Fihrist* that Qusṭā translated the text of the *Physics* with Alexander’s commentary on Book IV up to chapter 10 in the modern editions (so including the relevant passage), and that he also translated the text of the *Physics* with Philoponus’ commentary on Books I-IV, and that al-Dimashqī seems to have a translation of Book IV with Alexander’s commentary on it. In this footnote, Badawi raises the natural question of whether Qusṭā’s and al-Dimashqī’s translations (and the Syriac translation) do not have 216b17-20 because they are translations of the commentators who do not also have this passage, while Ishāq directly translated the text of the *Physics* which belongs to the same branch as the extant Greek mss. of the *Physics* which all have 216b17-20 like Ishāq’s translation. Badawi defers his answer to this question to another publication but if we just focus on 216b17-20, an answer along these lines makes sense (but of course, other passages in the Arabic translations of the *Physics* might suggest something else). (For Ross’ account of the textual history of the *Physics* building on Diels, see Ross’ Introduction in his OCT edition of the *Physics* p.102-18. In particular, Ross reports his general agreement with Diels’ account that Simplicius is a witness to a line of tradition of the text of the *Physics* different from all the extant Greek mss. of the *Physics*, but that the textual history of the *Physics* seems to exhibit too much contamination to establish clear-cut family-tree with branches (103-7).)

Apart from these, there are other references to Qusṭā’s and al-Dimashqī’s translations: in my cursory readings of parts of Book IV, I spotted three quotes from Qusṭā’s translation recorded in the margins of the ms. (see p.312 n.1, p.331 n.2, and p.333 n.2 in Badawi’s edition), and two quotes from al-Dimashqī’s translation (see p.342 n.1, and p.348 n.3 in Badawi’s edition).

the *Physics*.⁶³⁰ These comments from Philoponus are usually clearly marked with “(qāla) Yaḥyā” at the beginning of each comment.⁶³¹ We have this version of Philoponus’ commentary on Books III-VII (and two comments from Book VIII).⁶³² Besides this very extensive version of Philoponus’ commentary on the *Physics*, the Baghdad *Physics* also contains a number of quotes or paraphrases from Alexander and Themistius. Elias Giannakis studies all the paraphrases and quotes from Alexander in his article “Fragments from Alexander’s Lost Commentary on Aristotle’s *Physics*.”⁶³³ He concludes that the majority of the quotations or paraphrases from Alexander found in the Baghdad *Physics* seems to be taken from Philoponus’ commentary.⁶³⁴ Giannakis adds that it is also possible that the compilers of the Baghdad *Physics* had access to the Arabic translations of Alexander’s commentary, but if this was the case, unlike Philoponus’ commentary which forms the basis of the Baghdad *Physics*, they used Alexander’s commentary in a quite limited fashion; Giannakis also adds that it is possible that the compilers of the Baghdad *Physics* found some quotes from Alexander in the margins of their copy of Philoponus’ commentary, but that given available evidence, it is not possible to confirm or deny this hypothesis.⁶³⁵

I am not aware of a similarly comprehensive study of the quotes and paraphrases attributed to Themistius in the Baghdad *Physics*; so I checked the references to Themistius in the Baghdad *Physics* as recorded in the index of names in Badawi’s edition. All of these are from the first four

⁶³⁰ See p.4-17 in Paul Lettinck’s introduction in Philoponus and Simplicius, *Philoponus: On Aristotle Physics 5-8 with Simplicius: On Aristotle on the Void*, trans. Paul Lettinck and J. O. Urmson (London: Bloomsbury, 2014). The extent to which the Baghdad *Physics* depends on Philoponus’ commentary on the *Physics* is more extensively discussed in Elias Giannakis’ dissertation “Philoponus in the Arabic Tradition of Aristotle’s *Physics*” (University of Oxford, 1992). Unfortunately, I could not inspect this study for my dissertation.

⁶³¹ i.e. Yaḥyā al-Naḥwī, John the Grammarian (commonly used name for Philoponus in the Arabic tradition, and, as Stephen Menn pointed out to me, Simplicius refers to Philoponus as the *grammatikos*); by contrast, if a comment is from Yaḥyā ibn ‘Adī, it is usually introduced with “(qāla) Yaḥyā ibn ‘Adī” or “(qāla) Ibn ‘Adī.”

⁶³² See Lettinck’s Introduction, p.5.

⁶³³ “Fragments from Alexander’s Lost Commentary on Aristotle’s *Physics*,” *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften* 10 (1996-1995): 157–87. On p. 157-60, Giannakis presents the conclusions of his analysis; on p.161 he presents a table which lists the places of the 18 fragments attributed to Alexander in the Baghdad *Physics* and indicates the passages in the extant Greek commentaries by Themistius, Philoponus, and Simplicius which correspond to or have a strong similarity to these fragments. The rest of the article has the Arabic texts of these fragments, their English translations, and the parallel Greek texts from Philoponus’ and Simplicius’ commentaries.

⁶³⁴ Giannakis arrives at this conclusion based on the fact that the majority of the fragments attributed to Alexander are either found in the corresponding passages in the extant parts of Philoponus’ commentary in Greek (we have the first four books entirely, and we have fragments from the last four books), or they are embedded in the version of Philoponus’ commentary in the Baghdad *Physics* (see Giannakis, *Fragments*, 158).

⁶³⁵ Giannakis, *Fragments*, 158-9.

books of the *Physics*. Since we have the entire text of Philoponus' commentary on the first four books, this makes the comparison with Philoponus easier. My quick survey of these passages and the comparisons with Philoponus' Greek commentary on the same texts from the *Physics* suggests that a big majority of the fragments attributed to Themistius in the Baghdad *Physics* also seem to derive from Philoponus' commentary.⁶³⁶

From a quick inspection of Book IV in the Baghdad *Physics*, it seems that we have the entire text of *Phys.* IV in Arabic translation (including the last part on time = chapters 10-4 in the modern editions) with the version of Philoponus' commentary, and it also includes comments by Yaḥyā

⁶³⁶ As I indicate above, my survey is not an in-depth and comprehensive study. First of all, I am not sure if Badawi's index records all references to Themistius in the Baghdad *Physics*. I would not be surprised if it does not. Moreover, I record in what follows some passages in Philoponus' Greek commentary where Philoponus explicitly cites Themistius, and these Greek passages citing Themistius seem to be similar in content to the indicated fragments attributed to Themistius in the Baghdad *Physics*, but I have not examined these Arabic or Greek passages in their contexts comprehensively. So, this short analysis cannot replace a more comprehensive and in-depth study. That said, here are the results of my survey. Badawi's index records seven references to Themistius. The seven fragments that seem to be attributed to Themistius in the Baghdad *Physics* are as follows (first I provide information about the fragment in the Baghdad *Physics*; after the semicolon I indicate the passage in Greek Philoponus which bears similarity to this fragment):

Fragment 1: found on p.176 lines 6-9 (as part of the commentary on *Phys.* III.1 201a15-9), embedded in a comment attributed to Philoponus; compare with 351.8-15 in Philoponus' Greek commentary.

Fragment 2: found on p.190 lines 1-7 (as part of the commentary on *Phys.* III.2), embedded in a comment attributed to Philoponus; compare with 368.18-28.

Fragments 3, 4, and 5 are part of the commentary on *Phys.* IV.4 211b5-212a7. Fragments 3 and 4 are back to back. They seem to be embedded in a comment attributed to Philoponus, but right before Fragment 3, the final compiler of the Baghdad *Physics*, Abū al-Ḥusayn al-Basrī, interjects a remark (p.314 lines 14-8).

Fragment 3: found on p.314 line 19 - p.315 line 2; compare with 550.9-551.20.

Fragment 4: found on p.315 lines 3-8; compare with 551.20-7.

Fragment 5: appears to be a short sentence found on p.321 lines 6-7, embedded in a comment attributed to Philoponus; I could not find a passage in Philoponus' Greek commentary on the same text of the *Physics* which explicitly cites Themistius and has a strong similarity to this sentence, but this short remark attributed to Themistius in the Baghdad *Physics* might be brought in from some other place in Themistius' commentaries by the person or the people who prepared the version of Philoponus' commentary as found in the Baghdad *Physics*.

Fragment 6: found on p.335 lines 9-11 (as part of the commentary on *Phys.* IV.5); compare with 595.18-28. This fragment in the Baghdad *Physics* is embedded in a comment from Philoponus but it is not explicitly marked as such; right after the textus of the *Physics*, on p.333 at line 9 we have "Yaḥyā," indicating that a comment by Philoponus begins. Then, on the next page, at line 7, we have "Ibn 'Adī," indicating that a comment by Yaḥyā Ibn 'Adī starts. As far as I see, there is no explicit marker indicating that Ibn 'Adī's comment ends until p.335 line 9 where this fragment attributed to Themistius begins ("qāla Thāmistiyūs"), but it is clear that the passage that comes right before this fragment in the Baghdad *Physics*, namely from p.334 line 23 to p.335 line 8 is a close paraphrase of 594.29-595.17 in the Greek original of Philoponus' commentary. So, it seems that p.334 line 23 - p.335 line 11 in the Baghdad *Physics* is a paraphrase of the passage at 594.29-595.28 in Philoponus' Greek commentary, and of this passage in the Baghdad *Physics*, the first bigger part (p.334 line 23 to p.335 line 8) is a close paraphrase of 594.29-595.17 in the Greek, and the second smaller part (p.335 lines 9-11 = Themistius fragment 6) is a shorter paraphrase of / excerpt from 595.18-28 in the Greek.

Fragment 7: found on p. 391 lines 3-4 (as part of the commentary on *Phys.* IV.9 216b22-217a21), embedded in a comment attributed to Philoponus; compare with 671.20-1.

ibn ‘Adī and Ibn al-Samḥ. There are also a few fragments attributed to Alexander and Themistius.⁶³⁷

To indicate the importance of Aristotle in al-Fārābī’s eyes, Ibn Abī Uṣaybi‘a reports two anecdotes in *A Literary History of Medicine* 15.1.3.3. First, according to Ibn Abī Uṣaybi‘a’s report, when al-Fārābī was asked “who is more knowledgeable [*a ‘lam*], you or Aristotle?” he said in response, “if I could catch him [*adraktuhu*], I would be his greatest student [*akbar talāmīdhihi*].” Ibn Abī Uṣaybi‘a adds, “and it is reported of him [*yudhkaru ‘anhu*] that he said ‘I read Aristotle’s *Physics* forty times and I think I still need to get back to [reading] it [*annī muḥtāj ilā mu ‘āwadatīhi*].’” The translators of Ibn Abī Uṣaybi‘a in this edition point out in a footnote here (n.26) that “Al-Fārābī’s ‘obsessive reading’ of Aristotle seems to have been proverbial. Ibn Khallikān, who also reports this information, adds that he learnt from an autograph manuscript that al-Fārābī had read *De anima* a hundred times (*al-Wāfi*, i:103).” In any case, these reports are witnesses, at least, to the later perception in the Arabic tradition that al-Fārābī was a careful reader of Aristotle, and al-Fārābī’s works do bear out this perception; so, unless we have evidence to the contrary, we should not assume that al-Fārābī withheld such care from the *Physics*.

In fact, we have positive evidence that al-Fārābī worked on the *Physics* in his writings, closely engaging, at least, with various parts of the *Physics*, apparently including *Phys.* IV, and perhaps also with the whole of the *Physics*. There is an epitome of the *Physics* existing only in Latin translation attributed to al-Fārābī; as it reached us, it covers books IV-VIII: a revised edition of the Latin text, its English translation, and a discussion of this text’s attribution to al-Fārābī can be found in Cecilia Martini Bonadeo’s article “The *Distinctio Sermonis Super Librum Auditus Naturalis* Attributed to Abū Naṣr Al-Fārābī in Gerard of Cremona’s Latin Translation.”⁶³⁸ Martini Bonadeo reviews the direct and the indirect evidence on the attribution of this work to al-Fārābī on pp.286-92, and she concludes that it is probably by al-Fārābī. The account on *Phys.* IV in the *Distinctio* as we have it is rather short (see p.276 for the Latin and p.277 for the English

⁶³⁷ Six fragments attributed to Alexander (see fragments 4-9 in Giannakis, *Fragments* (p.172-4 for the Arabic, p.163-5 for the English translations)), and five fragments are attributed to Themistius in my survey based on Badawi’s index (see fragments 3-7 above in my previous footnote).

⁶³⁸ “The *Distinctio Sermonis Super Librum Auditus Naturalis* Attributed to Abū Naṣr Al-Fārābī in Gerard of Cremona’s Latin Translation,” *Studia Graeco-Arabica* 10 (2020): 271–92.

translation) but if this work is by al-Fārābī, it would show al-Fārābī's close engagement with the *Physics* so as to be able to epitomize it, including *Phys.* IV.

Also, al-Fārābī has an interesting treatise on the void.⁶³⁹ To be clear, this work is not a commentary on Aristotle's account of the void in *Phys.* IV, and it is not a general discussion of the arguments for and against the existence of the void either. Rather, in this work al-Fārābī argues against some specific 'experimental' arguments using mechanical set-ups for the existence of the void, but Aristotle's discussion of the void in *Phys.* IV informs al-Fārābī's account in this treatise.⁶⁴⁰

Apart from these works, there are some other titles mentioned in the bio-bibliographical sources that seem to deal with the *Physics* as a whole or some topics discussed in the *Physics*. In particular, in Ibn Abī Uṣaybi'a's list of al-Fārābī's works, the following works seem to deal with various topics discussed in the *Physics*: “n.22⁶⁴¹ Account [*kalām*] on the Void [= Steinschneider D.31, p.119]⁶⁴²,” which I described above, “n.46 Account on Space [*ḥayyiz*] and Magnitude [*miqdār*] [= Steinschneider D.32, p.119],” “n.50 Book on the Changing Beings [*al-mawjūdāt al-mutaghayyira*] Also Known as the Natural Account [= Steinschneider D.33, p.119-23],” and “n.92 Account on the Fact That the Motion of the Heavenly Sphere [*falak*] is Permanent [= Steinschneider D.29, p.119].” In particular, “Account on Space [*ḥayyiz*] and Magnitude [*miqdār*]” was possibly informed by Aristotle's account of place in *Phys.* IV. Apart from these works which deal with particular topics covered in the *Physics*, Ibn Abī Uṣaybi'a also lists some works that seem to be or contain commentaries on or epitomes of the *Physics*: “n.24 Commentary [*sharḥ*] on Aristotle's *Physics* by Way of Annotation [*‘alā jihat al-ta’līq*],” and “n.112 Book of *Physics* [*kitāb al-samā’ al-ṭabī’ī*],” both of which, along with the *Distinctio* mentioned above, are discussed in Steinschneider E.b.2, p.135-8. As mentioned above, Martini Bonadeo assesses the correctness of the ascription of the *Distinctio* to al-Fārābī on p.286-92 of

⁶³⁹ For the Arabic text with its English and Turkish translations, see Al-Fārābī, *Ebū Naṣr il-Fārābī'nin Halâ Üzerine Makalesi* (*Abū Naṣr al-Fārābī's Treatise on the Void*), ed. and trans. Necati Lugal and Aydın Sayılı (Ankara: Türk Tarih Kurumu Yayınları, 1951).

⁶⁴⁰ For a helpful analysis of this treatise by al-Fārābī, see Aydın Sayılı, “Al-Fārābī's Article on Vacuum,” *Belleten* 15 (1951): 151–74.

⁶⁴¹ These numbers are the numbers of these titles in the list of al-Fārābī's works in Ibn Abī Uṣaybi'a's *A Literary History of Medicine* 15.1.5.

⁶⁴² Moritz Steinschneider, *Al-Farabi (Alpharabius) des arabischen Philosophen Leben und Schriften* (Saint Petersburg: Imprimerie de l'Académie Impériale des Sciences, 1869).

her article, and in particular she reviews some of these titles in Ibn Abī Uṣaybi‘a’s list of al-Fārābī’s works as potential candidates as the Arabic original of the *Distinctio* and compares them with the titles in some other medieval Arabic lists of al-Fārābī’s works; she concludes on p.291-2 that the *Distinctio*’s Arabic original was possibly the *Book of Physics* (n.112) but that it was more probably a part of “n.87 Book on the Aims [*aghrāḍ*] of Aristotle in Each of His Books [Steinschneider’s discussion of this work is in E.a.2 p.132-3].”

Appendix: “*homoeides*”

As mentioned above in Section 2.b, in T5 (2) Porphyry talks about “what is one in species/form [*eidei*] and *homoeides* [*to de tō(i) eidei hen kai homoeides*];” I pointed out there that “one in *eidos*” can be used in one-place or in many-place contexts. When it is used in one-place contexts, it is said of a universal and expresses the fact that this universal is or has a single form, not a conjunction of multiple forms. So, for example, the human species is one in *eidos* in this sense because it is not or has not a conjunction of multiple forms while the universal of an accidental composite like the universal generally signified by “white human” is not one in *eidos* in this sense. When “one in *eidos*” is used in many-place contexts, it is said of things of one and the same form or species (*eidos*); for example, Plato and Socrates are one in *eidos* in this sense because they have one and the same species which has or is a single form, not a conjunction of multiple forms. Since “*homoeides*” in the phrase “what is one in species/form [*eidei*] and *homoeides*” should be coherent with “one in *eidos*” in the same phrase, if “*homoeides*” is used in a many-place context here, “one in *eidos*” should also be used in a many-place context, but if “*homoeides*” is used in a one-place context here, “one in *eidos*” should also be used in a one-place context.

As I pointed out above, “*homoeides*” is often used in many-place contexts, collectively applying to multiple things which are of the same *eidos*. That said, we also find some *genuinely* one-place uses of “*homoeidēs*” in Aristotle.⁶⁴³ For example, among the passages cited in the LSJ entry on

⁶⁴³ I mean the genuinely one-place uses of the adjective, not as in the case where the locution is of the form “X is *homoeides*”, but the context makes it clear that this is a truncated version of “X and Y are *homoeidē*” or “X is *homoeides* Y_{dat}.” There are also similar truncated expressions with the singular adjective used substantively, e.g., where “*to homoeides*” is the truncated version of “*to homoeides* Y_{dat}” with “Y” to be supplied from the context: for

“*homoeidēs*,” Aristotle seems to have a one-place use of the adjective at *Phys.* I.4 188a13-4. Criticizing Anaxagoras’ view of the generation of homeomerous bodies, i.e., the bodies whose parts are of the same species as the whole when they are divided, Aristotle says that “he incorrectly grasped the generation of the *homoeidē* things [*tēn genesin tōn homoeidōn*].” Since the view Aristotle criticizes concerns the generation of *each* homeomerous thing, not the generation of multiple things *together* which have the same *eidos* or similar *eidē*, we should read “*tōn homoeidōn*” distributively, and take “*to homoeides*” here to mean “*to homoiomeres*.”⁶⁴⁴ The one-place use of the “*homoeides*” in the sense of homeomerous seems to be derived from the many-place use of the adjective to talk about elements as things whose parts are *homoeidē* with themselves. In his account of the element (*stoicheion*) in *Met.* Δ.3, Aristotle characterizes an element first as “the primary thing of which [the composite] is composed and which exists in [the composite] [*enuparchontos*] and is indivisible in kind into another kind [*adiairetou tō(i) eidei eis heteron eidos*]” (1014a26-7). To illustrate this, Aristotle gives the example of the phonemes: the phonemes (*stoicheia phōnēs*) are the elements of utterances (*phōnai*) because they are “the things out of which the utterance is composed and the ultimate things into which it is divided, but these [sc. the phonemes] are no longer divided into utterances that differ in kind from them, but rather, even if [a phoneme] is divided, its parts are *homoeidē*, like the part of water [which is] water, but not [the part] of a syllable”⁶⁴⁵ (1014a27-31).⁶⁴⁶ So Aristotle appears to be occasionally using “*homoeidēs*” in the sense of a homeomerous body, and this use seems to be grounded in the idea that such bodies are of the sort that when divided, their parts are *homoeidē* with the whole.

the latter, see *Met.* Δ.28 1024b8, Z.7 1032a24; Δ.5 1071a17 is somewhat different: “*homoeides*” there is grammatically singular but appears to modify a neuter plural subject.

⁶⁴⁴ *DC.* IV.2 308b8 (“*tōn allōn tōn homoeidōn hekaston*”) appears to have a similar one-place use of the adjective in the sense of homeomerous bodies. Although I am less certain about this, the “*homoeides*” at *Phys.* III.5 205a13 (and also at 1067a9 in a slightly modified version of this passage in *Met.* K.10) might also be another example.

⁶⁴⁵ Aristotle divides the phonemes (*stoicheia*) into three at *Poet.* 20 1456b22-31: vowels (*phōnēenta*, e.g., Α), semi-vowels (*hēmiphōna*, e.g., Σ), and consonants (*aphōna*, e.g., Γ). It seems that Aristotle’s point in the *Met.* Δ.3 passage above is that some phonemes are not divided at all (consonants), while others are divided (vowels, maybe also semi-vowels) but they are divided into phonemes of the same kind; i.e., it seems that, at least in this context, Aristotle classifies phonemes qualitatively and not quantitatively, and when a long Α is divided into shorter Αs, they are still the same kind of phoneme. Aristotle says in this passage that syllables are not like this; one might remark that a long Α is a syllable as well as a short Α, and if they are the same kind of syllable, Aristotle should have said that at least some syllables can be divided into syllables of the same kind; perhaps Aristotle would deny that the long Α is the same kind of *syllable* as the short Α because they scan differently.

For an earlier account of the division of phonemes into similar three categories, see Plato’s *Philebus* 18b-c.

⁶⁴⁶ Compare this use of “*homoeides*” expressing that something is homeomerous with a similar use of the adjective in *DA* I.5, more specifically, the two instances of the phrase “*homoeides tois moriois*” (411a17, 18-9), and “*homoeidēs*” (clearly truncated from “*homoeidēs [tois moriois]*”) (411a21) which are contrasted with “*anomoimerēs*” (411a21).

Although in the *Phys.* I.4 passage above, and the similar passages noted in Footnote n.644, “*homoeides*” is used in a one-place context modifying such *bodies*, perhaps Aristotle would also call a phoneme “*homoeides*” for a similar reason, even though a phoneme is not corporeal. In either case, the idea would be rather straightforward: the whole is called “*homoeides*” because when it is *quantitatively* divided, either as a solid in the case of a body, or along with its duration in the case of a phoneme, the resulting parts are *homoeidē* with the whole.

So even if I am right that we have a genuinely one-place use of the adjective “*homoeidēs*” in the *Physics* passage mentioned above, this use of the adjective does not help us directly with the Porphyry passage under consideration (T5 in Section 2.b). Recall that we concluded that if “*homoeides*” is used in a one-place context in the phrase “*tō(i) eidei hen kai homoeides*,” the underlying subject of the phrase is some *universal* which is one *eidei* and *homoeides*. But this claim is incoherent if “*homoeides*” means something which is, when *quantitatively* divided, of the same *eidos* as its resulting parts. I find it hard to make sense of the quantitative division of a universal in the way that a solid or a duration is quantitatively divided because a universal is not a quantity and it is not quantified in a straightforward sense either.

So the major problem with applying this one-place use of “*homoeides*” to a universal is that this use of “*homoeides*” implies that the *homoeides* whole is *quantitatively* divisible. Recall that if “*homoeides*” is used in a one-place context in the phrase under consideration (“what is one in species/form [*eidei*] and *homoeides*”), it should mean, roughly, that a universal is *homoeides* because it is or has a single form (*eidos*), not a conjunction of multiple forms (*eidē*) in the way that the universal of an accidental composite is or has a conjunction of multiple forms. In the passages reviewed above where Aristotle uses “*homoeides*” in one-place contexts, he means something like “*homoiomeres*,” i.e., when quantitatively divided into parts, its parts are of the same *eidos* as the whole. For this idea to be analogically extended so that it can also apply to a universal in the sense we expect in the passage under consideration, it should not be restricted into quantitative parts because a universal does not have quantitative parts in the sense reviewed above; also, it should express *lack* of division into such non-quantitative parts. In other words, we want “*homoeides*” to mean that a universal is one in *eidos* and is *homoeides* if it is not divided into multiple *eidē* in the relevant sense (i.e., that it is or has a single *eidos*); on the other hand, the contrary of this sense of *homoeides* and multiplicity in *eidos* hold of a universal if this

universal is divided into multiple *eidē* in the way that a universal accidental composite is divided into multiple *eidē* (i.e., that it is or has a conjunction of multiple *eidē*).

There are some passages with the one-place uses of “*homoeidēs*” which appear to take a first step towards using “*homoeidēs*” to mean a whole whose parts, non-quantitatively understood, are of the same or like form so that the whole is uniform. We see the beginning of a development in this direction in Aristotle’s *Rhetoric* III.14. At the beginning of this chapter (1414b19-29), Aristotle says that in the introduction (*prooimon*) of an epideictic speech, the writer of the speech should address whatever he wants to address, and Aristotle adds that even if the introduction deviates from the main topic, as Isocrates does in the introduction of his *Helen* where he talks about the *eristikoi* unconnected to Helen, “it is also appropriate [*harmottei*] that the whole speech is not *homoeidēs*” (1414b29). It is implied that a *homoeidēs* speech would deal with the same topic in its introduction as it does in the body of the speech. This is because Isocrates’ *Helen* has its introduction on a different topic than its body, and Aristotle thinks that by doing so Isocrates avoids making his speech *homoeidēs*; and Aristotle approves this.

So a *homoeidēs* speech would have parts which are, in a sense, of the like form. I presume that these parts of the speech are originally divided in consideration of the temporal division of a continuous performance of a speech, but in this passage from the *Rhetoric*, Aristotle talks about how one ought to “write [*graphein*]” the speech (1414b25). So we should imagine a work which is first realized in writing. As the distance between a speech as a written work and its actual performance grows, the parts of the speech also come to be understood less in terms of the temporally divided parts of the actual performance of the speech. This means that in the *Rhetoric* passage we are just stepping into a territory where something is said to be *homoeidēs* because its parts are of like form in some sense, but its parts are not quantitative divisions of the whole.

With a slight change in meaning, “*homoeidēs*” seems to have assumed also the sense of “monotonous” said of a written work. The LSJ entry on “*homoeidēs*” records that a monotonous author is called “*homoeidēs*” (e.g. in Dionysius Halicarnassus’ *Epistula ad Pompeium Geminum* 3.20); this is presumably because such an author’s writings are typically “*homoeidēs*” in the sense of being monotonous and the author is called “*homoeidēs*” as a synecdoche. It seems that Porphyry also uses “*homoeidēs*” in a one-place context in the sense of a work whose parts are of

a similar or the same form, perhaps even with a negative connotation as monotonous, in one passage in his *Homeric Questions on the Iliad*.⁶⁴⁷

Of the uses of “*homoeidēs*” that the LSJ entry on the adjective reports, two others appear at first sight to be relevant one-place uses of “*homoeidēs*.” The first one is from Plotinus’ *Ennead* III 7.8. According to the LSJ entry, the “*homoeidēs*” modifying “*kinēsis*” is used here in the sense of uniform. In agreement with this report, Armstrong translates this phrase in his Loeb translation as “uniform movement.”⁶⁴⁸ If “uniform” is the correct translation, the “*homoeidēs*” here must be used in a one-place context. However, it is not clear to me whether it is used in a one-place or a

⁶⁴⁷ The passage in question is from Book 8 section 5 lines 21-4 in Schrader’s edition = on p.134 in MacPhail Jr.’s edition (John A. MacPhail Jr., *Porphyry’s Homeric Questions on the Iliad: Text, Translation, Commentary by John A. MacPhail Jr.* (Berlin: De Gruyter, 2011)). This passage is on *Iliad* 4.166-8. Here is the passage with MacPhail Jr.’s translation of it on p.135:

ἄμα δὲ καὶ ἠθέλησεν ἀλκιμωτέρους Ἑλλήνας ἐπιδείξας τότε τοῖς Τρωσὶ τὴν παρὰ τοῦ Διὸς βοήθειαν ἐπαγαγεῖν. καὶ τὸ ὁμοειδὲς δὲ ἐφυλάξατο· ἦν γὰρ ὁμοειδὲς Τρωσὶ μάχῃ παράγειν τοὺς Ἑλλήνας ἡττωμένους· ποικίλλειν γὰρ θέλει. “As soon as he showed the Hellenes more stalwart, then he wanted to bring on the help from Zeus to the Trojans. He was on guard against uniformity [*to homoeides*]; for it would be uniform [*homoeides*] to bring defeated Hellenes in battle against Trojans; for he wants to employ variation [*poikillein*].”

Apart from these two uses of “*homoeidēs*,” the TLG lemma search on this word shows just another use of “*homoeidēs*” in the works by Porphyry digitized in TLG under his name. This other passage is from Porphyry’s *Homeric Questions on the Odyssey* Book 24 section 1 lines 39-43 in Schrader’s edition. At the beginning of this section (lines 1-2), Porphyry announces that Aristarchus declared the last book of the *Odyssey* spurious. Then Porphyry cites Aristarchus’ briefly stated reasons and tries to refute them. The mentioned passage is the last reason Porphyry cites from Aristarchus for the spuriousness of Book 24 with Porphyry’s attempt at refuting it.

‘τίς, φασί, χρεια τοῦ δευτέρου τῆς Νεκυίας ἐπεισοδίου;’ ἡ λύσις, ὅτι αἴτιον ἢ τῆς ποιήσεως πολύφωνος ποικιλία, καὶ ὅτι καὶ ἕτερα παρὰ τῷ ποιητῇ πολλὰ κεῖνται ὁμοειδῆ, οἷον μονομαχίαι κατὰ πρόκλησιν καὶ σφαγαὶ κατὰ τύχην ὅμοιαι καὶ προσώπων μεγαλαυχίαι ταυτότητα ἔχουσαι.

Here is my translation of this passage:

“‘What, they say, is the use of the second *Nekyian* episode [i.e., after the first one in Book 11 of the *Odyssey*]?’ The solution is that it is because of the variation with manifold expression [*polyphōnos poikilia*] of the poem [*poiēsis*], and that there are also many other [passages] of a like form [*homoeidē*] found in the writings of the poet; for example, one-to-one fights after a challenge, sacrifices which are accidentally similar, and personal boasts [*prosōpōn megalauxiai*] which are the same.”

I think there is not much room for doubt that the “*homoeidē*” here is used in a many-place context. Since we are examining the one-place use of the adjective now, the second passage is not relevant for our present purpose. These three (two in the first passage, one in the second) are the only uses of “*homoeidēs*” in the texts digitized in TLG under Porphyry’s name. That said, this fact is of limited value for our assessment of in what sense Porphyry used “*homoeides*” in the passage under consideration from his *Ad Gidalium*, i.e., T5 in Section 2.b, because only a few of Porphyry’s philosophical works are entirely extant, and of the surviving fragments, not all are digitized under his name in TLG. I went through the fragments of Porphyry recorded in Simplicius’ *Categories* commentary as collected in Smith’s edition (46F-74F) but I have not noticed any use of “*homoeidēs*” in these fragments (apart from the passage under consideration). I did not have the time to inspect the other fragments of Porphyry preserved in other commentaries to see if “*homoeidēs*” is used in a relevant sense in it (for example, Porphyry’s *De Interpretatione* commentary cited, e.g., in Ammonius’ commentary on *DI*, or Porphyry’s commentary on the *Physics* cited, e.g., in Simplicius on the *Physics*).

⁶⁴⁸ Plotinus, *Plotinus: In Seven Volumes*, trans. A. H. Armstrong, 7 vols., Loeb Classical Library (Cambridge, MA: Harvard University Press, 1966), v.3 p.323.

many-place context here. In the surrounding argument at lines 23-28,⁶⁴⁹ Plotinus argues against the view that time is the interval (*diastēma*) of movement. Plotinus' strategy seems to be to show the incoherence of the opponent's view by showing that there are different intervals covered by the different parts of the same movement or different intervals covered by different movements, and the opponent does not seem to have a principled reason to pick one interval rather than the other to identify time with. It seems to me that what Plotinus does for this purpose can be interpreted in two ways: it is either the case that Plotinus initially considers the two intervals covered by the slow and the fast parts of one uniform (*homoeidēs*) movement (e.g., rectilinear) with changing speed, or he initially considers the two intervals covered by two movements where one is of the same kind (*homoeidēs*) as the other (e.g., two rectilinear movements) but one is slow and the other is fast; then Plotinus points out that such examples can be multiplied indefinitely. It seems to me that both the one-place reading and the many-place reading of “*homoeidēs*” here are compatible with Plotinus' argument. Besides, even if Plotinus uses “*homoeidēs*” in a one-place context in this passage and means uniform by it, it is not clear from this passage or the surrounding passages in what sense the movement is said to be uniform. So this passage is not very helpful for finding a one-place use of “*homoeidēs*” which can also apply to a universal which is one *eidei*.⁶⁵⁰

As for the second passage mentioned in the LSJ entry that appears relevant, the LSJ entry reports that “*homoeidēs*” is used in the sense of unaltered in Discorides Pedanius' work on medical

⁶⁴⁹ Here is the passage: “Ἄρ' οὖν κινήσεώς τι; εἰ μὲν διάστημα, πρῶτον μὲν οὐ πάσης κινήσεως τὸ αὐτό, οὐδὲ τῆς ὁμοειδοῦς· θάπτον γὰρ καὶ βραδύτερον ἢ κίνησις καὶ ἡ ἐν τόπῳ. καὶ εἴεν ἂν ἅμφω μετρούμεναι αἱ διαστάσεις ἐνὶ ἐτέρῳ, ὃ δὴ ὀρθότερον ἂν τις εἴποι χρόνον. ποτέρας δὲ αὐτῶν τὸ διάστημα χρόνος, μᾶλλον δὲ τίνος αὐτῶν ἀπειρῶν οὐσῶν;” (III 7.8 23-8). At the beginning of this passage Plotinus asks whether time is “something pertaining to movement [*kinēseōs ti*]” (at 8.23). When he lists at the end of the previous section the definition attempts of time in terms of movement that he is to argue against in the present section, about the thesis under consideration, he writes, “and some [argue that time is] something pertaining to movement, more precisely, the interval of movement [*hoi de kinēseōs ti ē diastēma kinēseōs*]” (7.25). So right after asking whether time is “something pertaining to movement” at the beginning of the passage cited at the beginning of this footnote, in the rest of this passage, Plotinus provides a reductio argument to show that time is not the interval (*diastēma*) of movement: “if it is the interval, first, it is not the same for every movement, not even for the *homoeides* [movement]. For movement is faster or slower, also the [movement] in place. And both intervals [*diastaseis*] would be measured by something else, which would be more correctly called ‘time’. So the interval of which of the two [movements] is time? Rather, [the interval] of which [movement], among the indefinitely many [movements, is time]?”

⁶⁵⁰ *Ennead* II 8.1.43-4 speaks of “*hosa de tōn megethōn homoeidē homoiochroa onta*.” Since the *megethos* at issue is said to be similarly-colored, it must refer not to a continuous quantity as such but to a body. Whether we should translate the “*homoeides*” here as “uniform” or not, it seems that the “*homoeides*” here is used in a sense close to the sense of homeomerous discussed above, i.e., a *megethos* is said to be *homoeides* because when it is quantitatively divided, its parts have the same *eidos*. For the reason given above, this passage is also not helpful for finding a one-place use of “*homoeidēs*” that can apply also to a universal.

plants and medicines, *De Materia Medica* 4.58. In the entry on the plant “*agēraton*,”⁶⁵¹ Discorides explains why it has this name (which means ageless): “it is called ‘*agēraton*’ on account of the fact that its flower is largely kept [*phulattesthai*] *homoeides*.”⁶⁵² So the flower is said to remain *homoeides* because the flower at t1 is *homoeides* with the flower at t2 where t2 is later than t1. Despite the misleading first appearance, this use of the adjective does not seem to be in a one-place context. To see that it is not used in a one-place context, compare this sentence with the following sentence: “the flower remains the same.” It appears that “the same” is used in a one-place context here, but it is in fact used in a two-place context: as Aristotle implies at *Met.* Delta 9 1018a7-9, “the same [*tauton*]” is either said of many things, or of one thing used as many, “for example, when someone says it is the same as itself, for he uses it as two [things].” Likewise, the “*homoeides*” in the Discorides passages signifies a relation whose empty slots, so to speak, are filled with the same thing, taken in different times and as such treated as many.

Let me summarize my findings. My present purpose is to figure out the underlying subject of “*tō(i) eidei hen kai homoeides*” in the long Porphyry passage under consideration (T5 in Section 2.b). The first adjective, “*tō(i) eidei hen*,” is used in one-place and many-place contexts. If it is used in a one-place context, the underlying subject would be some universal which is one *eidei*. If it is used in a many-place context, the underlying subject would be some collection of things which are together one *eidei*. Since both adjectives are supposed to apply to the same underlying subject, both must be used in a one-place context or both in a many-place context. So if we can determine whether “*homoeides*” is used in a one-place or a many-place context here, we would get very close to determining the underlying subject of the whole phrase, “*tō(i) eidei hen kai homoeides*.” I pointed out that “*homoeidēs*” is often used in many-place contexts, referring to things whose species is the same or whose form is the same or like. I also showed that “*homoeidēs*” appears to be used in one-place contexts, meaning something whose parts obtained by a quantitative division of it are *homoeidē* as that thing. A universal cannot be said to be *homoeides* in this sense coherently because strictly speaking, a universal is not a quantity or a

⁶⁵¹ According to Lily Y. Beck’s translation (Discorides, *De Materia Medica*, trans. Lily Y. Beck (Hildesheim: Olms - Weidmann, 2005), 271), pot marjoram (*Achillea ageratum*).

⁶⁵² Agreeing with the LSJ entry, Beck translates “*homoeides*” here as unaltered too: “It was named *agēraton* because by and large the flower stays unaltered” (p.271).

quantified thing in the way that a magnitude or a duration is, so we cannot coherently speak of parts of a universal produced by a quantitative division of it.

As I said above, if “*homoeides*” is used in a one-place context in the phrase under consideration (“*tō(i) eidei hen kai homoeides*”), it should roughly mean that a universal is *homoeides* in this sense because it is or has only single form (*eidos*), and not a conjunction of multiple forms. For this purpose, “*homoeides*” should mean that a universal is not divided into multiple forms and the contrary of “*homoeides*” in this sense would mean that a universal is divided into multiple forms (like the universal of an accidental composite). In other words, the relevant sort of division should be understood beyond quantitative division, and *homoeides* should indicate privation of the relevant sort of division (i.e., division into multiple forms in the way that, e.g., the universal of “white human” is divided into the *eidos* of the human and the *eidos* of whiteness).

I pointed out a few passages starting from *Rhetoric* III.14 that hint at the beginning of the expansion of the sense of “*homoeidēs*” as uniform, generally meaning something whose components, however such components are understood, are of the same kind or of the same or like form, but “*homoeidēs*” in these passages also does not mean exactly what we want it to mean in the context of the passage under consideration (“*tō(i) eidei hen kai homoeides*”). Moreover, I inspected all the uses of “*homoeidēs*” in Plato, Aristotle, Plotinus, and Porphyry in the TLG database⁶⁵³ as well as all the relevant looking passages cited in the LSJ entry on the adjective, but I did not notice any passage in which “*homoeidēs*” is clearly used in a one-place context to mean uniform in the sense in which we expect it to mean in the phrase under consideration. So it seems more likely that in the Porphyry passage under consideration, we have a many-place use of “*homoeides*.” Accordingly, it is more likely that “*hen eidei*” and “*homoeides*” are used in a many-place context with the same meaning, and the “*kai*” in the whole phrase, “*tō(i) eidei hen kai homoeides*,” is epexegetic. So probably the underlying subject of “*tō(i) eidei hen kai homoeides*” is some things which are together one *eidei*, i.e., they are *homoeidē*.

⁶⁵³ For lemma searches for “*homoeidēs*, -es” and its near-synonym “*homoioeidēs*, -es” in TLG, there are no hits in the Platonic corpus, 33+1 hits in the Aristotelian corpus, 21+0 hits in the Plotinian corpus, and 3+0 hits in the Porphyrian corpus. More on these three uses of “*homoeidēs*” in Porphyry, see Footnote n.647. As for the other passages, I inspected all of them, and I discussed or mentioned above the ones that seemed relevant to me.

Appendix: Simplicius' and Porphyry's commentaries on the *Categories* in Arabic and their availability to al-Fārābī

The account on the *Categories* in Ibn al-Nadīm's *Fihrist* mentions a number of Greek commentators and gives further information on some of them:

T1 *al-Fihrist* Flügel 248.20-5 = Sayyid v.2 161.8-16

الكلام على قاطيغورياس: بنقل حنين بن إسحاق.

[1] فممن شرحه وفسّره: فرفوريس، إصطفن الإسكندراني، اللينس،⁶⁵⁴ يحيى النحوي، أمونيوس، ثامسطيوس، ثاوفرسطس، سنبلقيوس،⁶⁵⁵ ولرجل يُعرّف بثاون سرياني وعربي. [2] ويضاف⁶⁵⁶ من تفسير سنبلقيوس إلى المضاف. [3] ومن غريب التفاسير قطعة تضاف⁶⁵⁷ لأمليخس. قال الشيخ أبو زكريا⁶⁵⁸: يوشك أن يكون هذا منحولا إلى أمليخس لأنني رأيت في تضاعيف الكلام: قال الإسكندر. [4] وقال الشيخ أبو سليمان إنه استنقل هذا الكتاب أبا زكريا بتفسير الإسكندر الأفروديسي نحو ثلاث مائة ورقة.

The account on the *Categories* with the translation of Ḥunayn b. Ishāq.⁶⁵⁹

⁶⁵⁴ Sayyid: أيلينس.

⁶⁵⁵ Flügel: سنبلقيوس.

⁶⁵⁶ Sayyid: يصاب.

⁶⁵⁷ Sayyid: تصاب.

⁶⁵⁸ Sayyid: + <يحيى بن عدي>.

⁶⁵⁹ Henri Hugonnard-Roche points out that in the famous Paris ms. of the Arabic Organon that Badawi bases his edition on (i.e., MS. Paris Ar. 2346) all the works in the proper Organon (i.e., *Cat.*, *DI*, *APr*, *APo*, *Top.*, *SE*) are copied from Ibn Suwar's autograph copy (Henri Hugonnard-Roche, "Remarques sur la tradition arabe de l'Organon d'après le manuscrit Paris, Bibliothèque nationale, ar. 2346," in *Glosses and Commentaries on Aristotelian Logical Texts: The Syriac, Arabic and Medieval Latin Traditions* (London: Warburg Institute, 1993), 19–28, 19). Moreover, Hugonnard-Roche points out on p.20-1 that the colophons for the copies of these works in this ms. have three parts: the first part states that the work has ended and sometimes states the name of the translator too; the second part in all the works except for *SE* are in the same hand which is different from the hands which copied these works and the second part contains an indication of the source of the copy in this ms., that is, Ibn Suwar's autograph and his source; the third part in all the works including *SE* are written in the same hand which is different from the other two hands and the third part contains an indication of an additional collation. In particular, I checked the colophons for the copies of *Cat.* and *DI* in this ms. and verified Hugonnard-Roche's observations for these two works. The colophons for the copies of *Cat.* and *DI* are almost identical. To complement some details in the colophon for the *Cat.*, I mention below also the colophon for *DI* (the colophon for *Cat.* is on 178v in the ms. = Badawi p.76 and the colophon for *DI* is on 191v = Badawi p.133; the pdf of the ms. that I consult is at times impossible to read; in those cases I followed Badawi's readings).

The colophon for *Cat.* (with some notes and passages from the colophon for *DI*) is as follows:

"[1] Aristotle's work called "Qāṭīghūriyā" i.e. the *Categories* [*al-maḡūlāt*] has been completed [in the corresponding place in *DI*, it is added that this work is translated by Ishāq].

[2] Al-Ḥasan ibn Suwār corrected it* from the copy of Yaḥyā ibn 'Adī which is in his [sc. Yaḥyā] own hand, with which he [sc. Yaḥyā] collated [*qābala*] the original [*al-dustūr*] which is in the hand of Ishāq the translator.

[1] Among the people who explained and commented on it are Porphyry, Stephanus the Alexandrian, Illīnus, Philoponus, Ammonius, Themistius, Theophrastus, Simplicius, and [a commentary] by a man known as Theon, in Syriac and in Arabic. [2] Simplicius' commentary contains what is ascribed to whomever it is ascribed [to] [*yudāfu... ilā al-muḍāf*].⁶⁶⁰ There is a curious commentary [*min gharīb al-tafāsīr*], a fragment attributed to Iamblichus. Al-shaykh Abū Zakariyyā [Yaḥyā ibn 'Adī] said: it very much seems [*yūshiku*] to be falsely attributed to Iamblichus because I saw in the contents of the



[* what I translate as “corrected it” is *ṣaḥḥahahu* in Badawi. The pdf of the ms. illegible (). Perhaps we should read “from the copy of [*min nuskhat*]”:” compare with the corresponding place in the colophon for *DI*: “[the present work] was transcribed [*nuqila*] from a copy in al-Ḥasan ibn Suwār's hand which he copied from Yaḥyā ibn 'Adī's copy with which he [sc. Yaḥyā] collated the original [*dustūr*] of Ishāq which is in his [sc. Ishāq's] hand.”] [3] With [the present work] [*bihi*] a copy written in the hand of 'Īsā b. Ishāq ibn Zur'a was collated, which he copied also from Yaḥyā ibn 'Adī's copy which is transcribed from the original copy [*dustūr al-aṣl*] in the hand of Ishāq ibn Ḥunayn, and it was in agreement. [The corresponding passage in the colophon for *DI* is almost exactly the same].” So both in the case of *Cat.* and *DI*, it seems that the texts in our ms. were copied from Ibn Zur'a's autograph which in turn was copied from Yaḥyā's autograph; Yaḥyā copied his autograph from the autograph of the translator Ishāq, and Yaḥyā, then, also collated his autograph with his source, Ishāq's autograph. After this, the texts in our ms. were collated with the autograph of Ibn Zur'a which was copied from the same autograph by Yaḥyā and the collator in both cases declares that the text in our ms. “was in agreement [*muwāfiqan*]” with Ibn Zur'a's autograph. We have several references to Ishāq in the marginal comments on the *Categories* above in this ms. (see especially Badawi p.96 n.130). So there is no doubt that the translator of the *Cat.* in our ms. is Ishāq. The *Fihrist* account under consideration credits his father Ḥunayn with the Arabic translation of the *Categories*: it is standard in the *Fihrist* accounts on the works of Aristotle that first the name of the work would be mentioned and then its translations into Arabic and Syriac would be mentioned and if it is not *explicitly* stated that a translation is a translation into Syriac, it would be implied that it is a translation into Arabic. It is possible that in the *Fihrist* account instead of Ishāq his father Ḥunayn was credited as the Arabic translator of the *Categories* by a simple mistake. Although it is not mentioned in the *Fihrist* account, Ḥunayn's Syriac translation of the *Categories* is mentioned in one of the marginal comments in our ms. (Badawi p.92 n.50). As far as I can see, there is no mention of a different Arabic translation of the *Categories* by Ḥunayn. So the fact that Ḥunayn had a Syriac translation of the *Categories* might have contributed to the mishap in the *Fihrist* account as it reached us in which Ḥunayn is credited with translating the *Categories* into Arabic.

⁶⁶⁰ In Pamela Huby and Dimitri Gutas, *Theophrastus of Eresus: Sources for His Life, Writings, Thought & Influence: Commentary Volume 2 Logic*, vol. 2 (Leiden: Brill, 2007), on p.22, Dimitri Gutas translates this sentence as “What is found of the commentary by Simplicius goes up to the [discussion of the category of the] relative” reading the verb يضاف as يصاب with Reżā Tajaddod's edition: Ibn al-Nadīm, *Kitāb Al-Fihrist*, ed. Reżā Tajaddod (Tehran: Marvi Offset Printing, 1971), 309 line 5. It is worth noting that Tajaddod also reads the following قطعة تضاف in تضاف as تضاف but this reading is not adopted by Gutas. Sayyid also reads these two words in agreement with Tajaddod. I follow the reading in Flügel because as can be seen in T24 below, al-Wahbī has a citation of Simplicius on an issue pertaining to the category of quality (discussed in ch. 8 right after the category of relatives (ch. 7) in the *Categories*) and this citation seems to derive from T25 from Simplicius' commentary on *Cat.* 8. At any rate, as I say more about it below, the reading in Flügel makes sense if we assume that المضاف at the end means “... whomever it is ascribed to;” this would be fully expressed in Arabic as المضاف إليه but in the passive participle of a verb the preposition governed by the verb with the pronoun (e.g., إليه in إليه) is sometimes omitted. Even if Gutas' reading is right, and if we ignore the Simplicius citation in al-Wahbī reproduced as T24 below, the rest of what I say below would stand because I use this piece of information about Simplicius' commentary in the *Fihrist* account to make the point that Ibn al-Nadīm directly or through his sources had some *specific* information about the content of Simplicius' commentary on the *Categories*.

account [*fī taḍāʾif al-kalām*] [the expression] “Alexander said.” [4] Al-shaykh Abū Sulaymān [al-Sijistānī] said that he commissioned Abū Zakariyyā [Yaḥyā ibn ʿAdī] to translate [*istanqala*]⁶⁶¹ this book with the commentary of Alexander of Aphrodisias which run to nearly three hundred leaves.

In T1 (1), Ibn al-Nadīm mentions several Greek commentators, including Porphyry and Simplicius but this list of the commentators on the *Categories* (*man sharaḥahu wa-fassarahu*) should not be taken by itself as a strong evidence that the Arabic translations of the commentaries by these commentators were available. Such a list of the commentaries might be compiled and passed on to Ibn al-Nadīm by his sources of philosophical information like Yaḥyā ibn ʿAdī (e.g., based on the commentators cited in a commentary as in Simplicius’ commentary, or from marginal comments in some manuscripts). In T1 (1), the only particular information provided on a commentary is the one “by a man known as Theon, in Syriac and in Arabic [with *sharḥ* or *tafsīr* being implied].” In the rest of T1 Ibn al-Nadīm provides further particular information about the commentary by Simplicius, a fragment ascribed to Iamblichus, and the commentary by Alexander. In (2) we are told that Simplicius’ commentary contains parts that are ascribed (*yudāfu*) to some people (“to whomever it is ascribed to [*ilā al-mudāf* [*ilayhi*]].”) This is an accurate description of Simplicius’ commentary as he cites many other earlier commentators. This piece of evidence is not enough to establish with certainty that Simplicius’ commentary was available in Syriac or in Arabic to Ibn al-Nadīm or to one of his sources of information but lends some weight to this view. In (3) Ibn al-Nadīm mentions a fragment (*qitʿa*) attributed to Iamblichus; Yaḥyā is cited as expressing his belief that this is a false attribution because he saw the mention of “Alexander says” in this fragment. This fragment could be from Iamblichus’ commentary on the *Categories* which is the primary substrate of Simplicius’ commentary and it is possible that in this passage from Iamblichus’ commentary Alexander was cited. Alternatively, it is possible that this fragment was from Simplicius’ commentary which started with an explicit citation of Iamblichus and then contained a citation of Alexander. It is reported in T1 (4) from al-Sijistānī that Yaḥyā had something to do with the text of the *Categories* along with a commentary on it by Alexander, and this as a whole amounted to about 300 leaves. As far as I can see, the tenth form verb *istanqala* is not recorded in the classical Arabic dictionaries. It is

⁶⁶¹ More on the translation of this verb, see below.

stated in a note on this word in Flügel's edition (p. 114 note 248.13) that Casiri (the Maronite orientalist Miguel Casiri?) and Hottinger (the Swiss orientalist Johann Heinrich Hottinger?) took it to mean "dass er dieses Buch den Abû Zakarjâ mit dem Commentar des Alexander übersetzen liess." According to this interpretation, *istanqala* means seeking the *naql*, i.e., translation of a book (X) from someone (Y), i.e., commissioning that person to translate this book, and would take double accusative (X and Y). So, according to this reading he, i.e., al-Sijistânî commissioned Yaḥyā to translate the *Categories* with Alexander's commentary on it.⁶⁶²

Dodge translates this clause as "Abū Zakarīyā' worked over the translation of this book...",⁶⁶³ apparently reading "*Abū Zakariyyā*" instead of the "*Abā Zakariyyā*" we find in both editions, and taking the verb *istanqala* to mean engaging in the *naql*, i.e., the translation of this book. Even if we keep this verb and assume that it has the sense of seeking what is conveyed by the first form verb, it can mean something like seeking the *naql* of the book in the sense of the transfer of it. So, al-Sijistânî's point might be that Yaḥyā sought to acquire the *Categories* with Alexander's commentary on it. In Ibn al-Nadīm's entry on Alexander of Aphrodisias, it is reported from Yaḥyā that Alexander's commentaries on the *Physics* and the *Posterior Analytics* were offered for sale to Yaḥyā but when Yaḥyā left to fetch the money, the commentaries were sold to someone else (Flügel 252.27-3.3 = Sayyid v.2 174.5-9). It is possible that al-Sijistânî makes a similar point that Yaḥyā put effort into acquiring the *Categories* with Alexander's commentary on it (perhaps this time with success). So, it seems that the text of the *Categories* along with Alexander's commentary on it was translated by Yaḥyā or it was translated earlier and Yaḥyā sought to acquire it. In either case, the information that it covered about three hundred leaves is too specific and strongly suggests the existence of such a commentary attributed to Alexander available in Yaḥyā's time.

In short, in addition to the names of the commentators mentioned at the beginning of the account on the *Categories* in the *Fihrist*, we are provided with concrete information about a commentary by someone known as Theon, Simplicius' commentary, Alexander's commentary, and maybe also a fragment from Iamblichus' commentary. We are not provided with any information about

⁶⁶² Robert Wisnovsky pointed out to me that this translation of *istanqala* is plausible in the context of the *Fihrist*. He also told me that he saw several instances of *istansakha* (in the sense of commissioning a copy (*naskh*) of a work) which would be parallel to *istanqala*.

⁶⁶³ Ibn al-Nadīm, *The Fihrist of Al-Nadim*, ed. and trans. Bayard Dodge, 2 vols. (New York, NY: Columbia University Press, 1970), 599.

the date of the Arabic translation of Simplicius' commentary, but the fragment ascribed to Iamblichus was inspected by Yaḥyā and if this is in fact from the Arabic version of Simplicius' commentary, this would mean that the Arabic translation of Simplicius' commentary was available in Arabic some time before Yaḥyā's death so that in the meanwhile a part of it could be detached, circulated under Iamblichus' name, and that Yaḥyā could inspect it. Moreover, the Arabic translation of Alexander's commentary was extant in Yaḥyā's time or it was translated by Yaḥyā himself. All these suggest that there is a reasonable chance that al-Fārābī could consult some or all of Simplicius's commentary, the fragment ascribed to Iamblichus if it was not part of Simplicius' commentary, and maybe also Alexander's commentary.

An Arabic commentary on the *Categories* ascribed apparently to a certain al-Wahbī contains citations from a number of Greek and Arabic commentators.⁶⁶⁴ This text is found in a single ms., MS. Istanbul Ayasofya 2483. Mübahat Türker studied the citations from the Greek and the Arabic commentators in this commentary and she also made some valuable observations on the date of the composition of this commentary and the identity of its author in an article.⁶⁶⁵ In this article, Türker edits the Arabic texts of these passages attributed to Greek and Arabic commentators. More recently, the whole commentary by al-Wahbī is edited by Nabil Fouly Mohamed Mongy.⁶⁶⁶ For the following discussion of the passages citing Porphyry, Simplicius, and other commentators from al-Wahbī's commentary, I inspected the citations identified by Türker; in the discussion below, I primarily use Mongy's edition (unless I note otherwise), and for ease of comparison, I also give references to these passages in Türker's article.⁶⁶⁷ Since my purpose in this appendix is to talk about the availability of Simplicius' commentary on the *Categories* and Porphyry's long commentary on the *Categories* in Arabic and in particular to al-Fārābī, I discuss in detail below all the passages citing Porphyry and Simplicius, and only some

⁶⁶⁴ More precisely, as the editor of this work Nabil Fouly Mohamed Mongy indicates, an epitome (*ikhtisār*) of a commentary (*tafsīr*) on the *Categories*. I simply call this text a commentary on the *Categories* here and by this I do not mean to deny that this is likely an epitome of a longer commentary. This issue is not directly relevant for my purpose in this appendix.

⁶⁶⁵ Mübahat Türker, "El-Âmirî ve Kategoriler'in Şerhleriyle İlgili Parçalar [Al-'Âmirî and Passages about the Commentaries on the *Categories*]," *Araştırma* 3 (1965): 65–122.

⁶⁶⁶ Al-Wahbī, *Mukhtaṣar Tafsīr Ma'ānī Alfāz Aristūṭālīs fī Kitāb al-Maqūlāt li-Abī Muḥammad 'Abd Allah bin Muḥammad al-Wahbī (The Epitome of the Commentary on the Meanings of Aristotle's Expressions in the Categories by Abū Muḥammad 'Abd Allah Bin Muḥammad al-Wahbī)*, ed. Nabil Fouly Mohamed Mongy (Cairo: Markaz al-I'lām al-'Arabī, 2008).

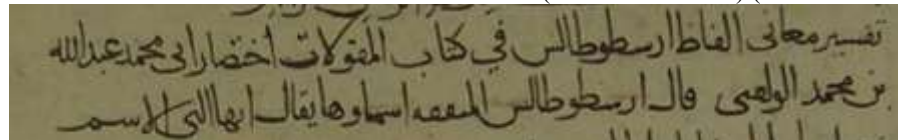
⁶⁶⁷ I also compared the ms. with both Türker's and Mongy's editions when it was called for. I would like to thank the Manuscripts Authority of Turkey (Türkiye Yazma Eserler Kurumu) for making a digital copy of this ms. available to me.

of the other citations, to the extent that they pertain to my discussion of Porphyry and Simplicius.⁶⁶⁸

Since the single ms. of this *Categories* commentary is sloppy with diacritics, there is a question of how we should read the *nisba* of the person to whom this commentary is attributed. Following the editor Mongy, I call the author of this commentary al-Wahbī because this is a conservative reading of the *nisba* of the person to whom this commentary is attributed as found in the ms.; it is not my purpose in this appendix to discuss whether the attribution of this commentary to this person is correct and if so, who this person was.⁶⁶⁹ Besides al-Wahbī, I also talk about the

⁶⁶⁸ In a later work expanding on this appendix, I intend to present a complete study of all the passages citing Greek commentators in al-Wahbī.

⁶⁶⁹ This is how the first two lines of the ms. looks (after the *basmala*) (85v lines 2-3):



Until the *nisba*, the name of the person to whom this epitome (*ikhtiṣār*) is attributed is clearly read: أبو محمد عبد الله بن محمد, but the *nisba* is harder to read. Türker proposes to read it as الوهبي but she adds that she could not find anyone mentioned under this name in the biobibliographical sources; she remarks that she found the mention of a doctor with the same name (أبو محمد عبد الله بن محمد) but with the *nisba* of الذهبي. Türker suggests that what we have in the ms. could be a corruption of الذهبي, especially if it was written without the diacritics. As Türker reports, this *al-Dhahabī* was a doctor from al-Andalus who died in 456/1064 in Valencia and he also worked on philosophy (Türker, 73).

Mongy reads the *nisba* as الوهبي. He discusses the authorship of the commentary and the authorship of its epitome in the introduction to his edition on p.17-28. In particular, on p.22-24 he argues on the basis of textual evidence that both the underlying commentary and the *ikhtiṣār* of it that we have belong to the same person. Based on the attribution at the beginning of the text, he claims that this person is al-Wahbī. Mongy does not point to anyone with this name and *nisba* mentioned in the biobibliographical sources.

Everett Rowson, and following him, David Reisman suggest that what we have is an epitome of a commentary by one of al-ʿĀmirī's students, Abū al-Qāsim al-Kātib. (These passages in Rowson and Reisman were brought to my attention by Gerhard Endress' entry on Abū Bishr Mattā in the *Ueberweg*: Ulrich Rudolph, Rotraud Hansberger, and Peter Adamson, eds., *Philosophy in the Islamic World: Volume 1: 8th–10th Centuries*, trans. Rotraud Hansberger (Leiden: Brill, 2017), 430). Al-Tawḥīdī mentions giving to Miskawayh a work by Abū al-Qāsim called *Ṣafw al-sharḥ li-Isāghūjī wa-Qāṭighūriyās*; Rowson suggests that "this would appear to be a very likely candidate for the original text epitomized by al-Wāhibī [reproducing the way Türker reads the name of the author of the *mukhtaṣar* we have]" (Everett K. Rowson, *A Muslim Philosopher on the Soul and Its Fate: Al-ʿĀmirī's Kitāb al-Amad ʿalā l-ʿAbad* (New Heaven, CT: American Oriental Society, 1988), 13-4). It is implied in Rowson's account that the cluster of the Arabic commentators mentioned in al-Wahbī is his main reason for this suggestion. Reisman spells out this reason more explicitly: "The strongest piece of evidence for the attribution of this work to Abū l-Qāsim al-Kirmānī [whom Reisman identifies with Abū al-Qāsim al-Kātib mentioned by al-Tawḥīdī; see above p. 166-9] is the fact that the latest authorities whose commentaries on the *Categories* are cited in the work belong to the Abū Sulaymān al-Sijistānī circle of philosophers, and culminate with al-ʿĀmirī, 'the latest and most often cited author,' [quoted from Rowson, 13] Abū l-Qāsim's teacher" (David C. Reisman, *The Making of the Avicennan Tradition* (Leiden: Brill, 2002), 169-70). Rowson and Reisman are right that the last commentators mentioned in al-Wahbī are al-Sijistānī, al-Khāzin (more on him, see below), and al-ʿĀmirī, and al-ʿĀmirī is cited the most (although there is no great difference between the number of times al-ʿĀmirī is cited and some other Greek or Arabic commentators are cited). To this I would add that in al-Wahbī there is no mention of Yaḥyā ibn ʿAdī or the other 'Baghdad Peripatetics' some of whose writings on the *Categories* reached us (Ibn Suwār's commentary on the *Categories* is preserved as marginal comments in the famous Paris ms. of the Baghdad Organon (for the marginal and interlinear comments on

conveyor of the citations from the Greek commentators in al-Wahbī's commentary. As we will see, these citations are not literal translations but paraphrases. By the conveyor of these passages into Arabic, I mean the person or the people who rendered these passages attributed to the Greek commentators in Arabic as a translation or as a paraphrase. It is not my purpose here to comment on the identity of the conveyor(s) and how he or they related to the author of the commentary under consideration. If the conveyor and the author are different people, it is possible that the author of the commentary faithfully reproduced what he found in his source, or that the author of the commentary modified the translations or the paraphrases of the passages from the Greek commentators he found in his source and gave them the final shape we find in this commentary.⁶⁷⁰

Before I move onto the discussion of the passages citing Simplicius, Porphyry and some other commentators in al-Wahbī, let me make a few brief remarks on the date of the composition of this commentary.⁶⁷¹ Among the commentators mentioned in al-Wahbī, Türker and Mongy identify Abū Ja'far al-Khāzin as the one whose date of death is the latest. This al-Khāzin was a mathematician and astronomer.⁶⁷² Türker seems to take this al-Khāzin to be the same person as another al-Khāzin who is reported to have written a work called *Kitāb al-ṭīb* in Gazna in

the *Categories* in this ms., see Badawī, *Manṭiq Aristū*, 77-96), and in the next generation, Ibn al-Ṭayyib wrote a proper commentary on the *Categories* which reached us: Cleophea Ferrari, *Der Kategorienkommentar von Abū l-Farağ 'Abdallāh Ibn al-Ṭayyib: Text und Untersuchungen* (Leiden: Brill, 2006)), let alone arguably the most famous philosopher in the medieval Arabic tradition, Avicenna, who is just in the next generation after the commentators cited in al-Wahbī (Avicenna was quite young when al-ʿĀmirī died in 381/992). However, if Mongy is right, as mentioned above, that the epitome and the underlying commentary belong to the same person, Rowson's and Reisman's suggestion that Abū al-Qāsim wrote a proper commentary on the *Categories* and a certain al-Wahbī (or as they read it following Türker, al-Wāhibī) then epitomized it cannot be correct.

I intend to discuss the authorship of this epitome and the underlying commentary more extensively in my future work expanding on this appendix.

⁶⁷⁰ For a similar and more extensive case of using Arabic paraphrases of a Greek commentator in an Arabic commentary, see the passages attributed to Philoponus in the Baghdad *Physics* (more on this, see Appendix: Availability of *Phys.* IV). Let me assert here without an argument that the body of our commentary on the *Categories* seems to be heavily influenced by the interpretive issues raised and the solutions provided to them in the Greek commentaries. So whoever is the author of this commentary, directly, or indirectly through the Arabic commentaries, he drew on a wider range of material from the Greek commentaries than those explicitly acknowledged. I intend to say more on this point in my future work expanding on this appendix.

⁶⁷¹ My following remarks are about the date of the original composition of the material presented in this *ikhtisār* attributed to al-Wahbī, i.e., the date of the composition of the underlying *tafsīr*.

⁶⁷² See "al-Khāzin" in P. Bearman et al., eds., *The Encyclopaedia of Islam, Second Edition* (Leiden: Brill, 2006), <http://referenceworks.brillonline.com/browse/encyclopaedia-of-islam-2> (henceforth *EI2*). Also see Carl Brockelmann, *Geschichte der arabischen Litteratur*, 2 + 3 Suppl. vols. (Leiden: Brill, 1937), Suppl. I 387 (henceforth *GAL*); and Fuat Sezgin, *Geschichte des arabischen Schrifttums*, 17 vols. (Leiden: Brill, 1967), V 298-9 (henceforth *GAS*).

421/1030.⁶⁷³ Mongy correctly identifies that Abū Ja‘far al-Khāzin cited in al-Wahbī is the astronomer and mathematician. Mongy suggests that this al-Khāzin died around 400 AH (1010) based on Khayr al-Dīn al-Ziriklī’s *al-A‘lām*.⁶⁷⁴ That said, the *EI2* article on al-Khāzin gives his date of death between 350/961 and 360/971.⁶⁷⁵ Along these lines, it is stated in the entry on him in *GAS* that “he lived probably in the first half of the 4th/10th century.”⁶⁷⁶ If al-Khāzin died before 360/971, he would not be the most recently alive commentator cited in al-Wahbī because al-‘Āmirī is reported to have died in 381/992.⁶⁷⁷ So even if we accept Mongy’s dating of the death of al-Khāzin as around 400/1010, the *Categories* commentary under consideration must have been composed not much earlier than 400/1010.⁶⁷⁸

At the end of the ms. of al-Wahbī’s commentary, it is stated that “its *tahrīr* was completed on Thursday, 12 Jumādā II 617” (= 14 August 1220).⁶⁷⁹ Mongy points out that *tahrīr* can mean the composition of a work or simply its copying.⁶⁸⁰ So, Mongy points out that this statement at the end of the ms. can be by al-Wahbī, stating when he finished composing his commentary, or by the copyist, stating when he finished copying al-Wahbī’s commentary.⁶⁸¹ Türker simply assumes that this indicates the date of copying.⁶⁸² It seems unlikely that this commentary was composed in 1220 but that the latest Arabic commentator it cites is from the 10th century, and it does not mention the works on the *Categories* by the major Arabic philosophers who were active in the meanwhile both in the Muslim East and the Muslim West, like Ibn Sīnā and Ibn Rushd. So, it seems safer to assume that 1220 was the date of copying of the ms. we have, and that al-Wahbī’s commentary was written some time before it.

⁶⁷³ Türker, 74, citing *GAL* I 494 (651).

⁶⁷⁴ Mongy, p.182 n.3. Reisman also correctly identifies this al-Khāzin (*The Making*, 170, n.17).

⁶⁷⁵ Also see, *GAL* Supp. I 387 which gives the same date of death.

⁶⁷⁶ *GAS* V 298.

⁶⁷⁷ See *EI2*, “al-‘Āmirī.”

⁶⁷⁸ As noted above in Footnote n.669, it is curious that the two comprehensive works on the *Categories* written by the next generation of major philosophers writing in Arabic, namely Ibn al-Ṭayyib and Ibn Sīnā are not cited in al-Wahbī. Of course this might be due to the fact that the author of our commentary did not have access to these commentaries but even if the author of our commentary was active in the Muslim West, it is unlikely that he would not have access to any work by Ibn Sīnā dealing with the *Categories*.

⁶⁷⁹ My calendar converter (accessible at <https://www.ttk.gov.tr/tarih-cevirme-kilavuzu/>) states that this Hijrī date is a Friday, not a Thursday.

⁶⁸⁰ P.18, n.1.

⁶⁸¹ P.26.

⁶⁸² P.73.

So, the safe assumption about the dating of al-Wahbī's commentary is that it was not composed long before the end of the tenth century and it was not composed after 1220. Less safer but likely conjecture is that it was composed not much later than Ibn Sīnā. So, I think that the first half of the eleventh century or even the last few decades of the tenth century is a reasonable conjecture for the date of composition of this commentary attributed to al-Wahbī.

The first text from al-Wahbī's commentary I want to discuss is from the commentary on *Cat.* 1 where Aristotle presents an account of *al-muttafiqa asmā'uhā = homōnuma*, *al-mutawāṭi'a asmā'uhā = sunōnuma*, and *al-mushtaqa asmā'uhā = parōnuma*. Following the late antique Greek commentaries, al-Wahbī adds that in addition to these three there are two further categories of things according to how they are denoted by the terms denoting them: *al-mutabāyina asmā'uhā = heterōnuma* and *al-mutarādifa asmā'uhā = poluōnuma*. After discussing Aristotle's account of the first three in the *Categories*, al-Wahbī says that "the commentators of [Aristotle's] books disagreed on the reason why [Aristotle] omitted to mention the *heterōnuma* and the *poluōnuma*," and he goes on to cite Porphyry, Syrianus, and Simplicius each expressing a reason why Aristotle did not also discuss the *heterōnuma* and the *poluōnuma* in the *Categories* like the first three:

T2 Al-Wahbī *On the Categories*, p.46 line 8 - p.47 line 3, Türker, 103

وقد اختلف المفسرون لكتبه⁶⁸³ في سبب تركه ذكر المترادفة والمتباينة.

[1] فقال فرفورئوس: إنما أورد هذه الثلاثة لحاجته إلى استعمالها في المقولات وترك الباقيين⁶⁸⁴ لأنه لم يحتج إليهما.

[2] وقال سوريانس: إنما تركهما لأن الكلام فيهما يتَّجه إلى البحث عن الألفاظ والعبارات دون المعاني ولهذا⁶⁸⁵ أخر ذكرهما إلى كتاب الشعراء والخطباء.

⁶⁸³ Both editions and the ms. read لكتبه but we might consider emending it into لكتابه because why would al-Wahbī talk about the people who commented on Aristotle's "books" here in the plural? It would make more sense him to mention the people who commented on Aristotle's "book" i.e., the *Categories*.

⁶⁸⁴ Mongy: الباقيين; Türker: الباقيين. This word is without the diacritics in the ms. (الباقيين), 86v line 17) but the *rasm* agrees with الباقيين instead of الباقيين because there are only two 'teeth' between the *rasm* of ق and the *rasm* of ن. The feminine is not needed by the sense of the passage because here he refers to the two remaining kinds of things, and المترادفة and المتباينة are not abstract nouns in the feminine but rather they are truncated versions of أسمائها and مترادفة أسمائها and these are condensed relative clauses, meaning multiple things whose *asmā'* are متباينة or مترادفة. ⁶⁸⁵ لهذا is printed by mistake in Mongy's edition.

[3] وقال سنبلقيوس: إنما ترك ذكرهما لأن المتقابلات يُعرَف بعضها من بعض لأن المترادفة تقابل المتفقة والمتباينة تقابل المتواطئة.

The commentators on [Aristotle's] books disagreed on the reason why [Aristotle] omitted to mention the *poluōnuma* and the *heterōnuma*.

[1] Porphyry said: [Aristotle] presented these three only because he needed to use them in the *Categories* and he omitted the remaining two because he did not need them.

[2] Syrianus said: he omitted both of them [sc., the *poluōnuma* and the *heterōnuma*] only because the account on them is directed toward the inquiry into expressions and phrases without features [*al-ma 'āni*], and for this reason, he deferred their mention to the book of the poets and the rhetoricians [*al-shu 'arā' wa-l-khuṭabā'*].

[3] Simplicius said: he omitted to mention them both only because one of the opposites is known [*yu 'rafu*] from the other, [and] because the *poluōnuma* are opposed to the *homōnuma* and the *heterōnuma* are opposed to the *sunōnuma*.

In fact, all the three reasons mentioned in this passage are found in a single passage in Simplicius' *Categories* commentary:

T3 Simplicius, *On Aristotle's Categories* 23.3-17

πέντε οὖν τούτων ἐκ τῆς διαιρέσεως ἀναφανέντων, ὁμώνυμων συνωνύμων πολωνύμων ἑτερωνύμων παρωνύμων, τὰ τρία μόνα νῦν παρέλαβεν ὁ Ἀριστοτέλης, τὰ τε ὁμώνυμα καὶ τὰ συνώνυμα καὶ τὰ παρώνυμα, [1] τάχα μὲν καὶ ὡς τούτοις μόνοις ἐν τῷ περὶ τῶν κατηγοριῶν χρησάμενος λόγῳ, [2] τάχα δὲ καὶ ὡς ἐκ τῶν δύο τούτων ῥαδίας οὔσης τῆς τῶν ἀντικειμένων αὐτοῖς γνώσεως. ὁ γὰρ τὰ ὁμώνυμα ἐγνωκῶς τὰ κατὰ μὲν τὸ ὄνομα κοινοῦντα, κατὰ δὲ τὸν λόγον διαφέροντα, εἴσεται καὶ τὰ πολωνύματα τὸν μὲν λόγον ἔχοντα κοινόν, διάφορα δὲ τὰ ὀνόματα· καὶ πάλιν ὁ τὰ συνώνυμα ἐγνωκῶς τὰ κατ' ἄμφω κοινοῦντα, εἴσεται καὶ τὰ ἑτερωνύματα διαφέροντα κατ' ἄμφω. τάχα μὲν οὖν καὶ οὕτως ἂν τις ὀρθῶς λέγοι τῆς Ἀριστοτελικῆς συντομίας στοχαζόμενος, [3] ὀρθότερον δέ, ὡς καὶ τῷ φιλοσόφῳ Συριανῷ δοκεῖ, τὸ τὰ παραλειφθέντα δύο, τὰ τε πολωνύματα καὶ τὰ ἑτερωνύματα, πρὸς λεκτικὴν <μᾶλλον> παρασκευὴν ὁρᾶν ἢ πρὸς αὐτὴν τὴν τῶν

πραγμάτων ἐπίβλεψιν· διόπερ ἐν ῥητορικαῖς τέχναις καὶ τοιαύταις ἄλλαις πραγματείαις οἰκειότερον περὶ τούτων διαλέγεται...

Although these are shown to be five by division (*diairesis*), namely, *homōnuma*, *sunōnuma*, *poluōnuma*, *heterōnuma*, and *parōnuma*, Aristotle took up here only three of them, the *homōnuma*, the *sunōnuma*, and the *parōnuma*, [1] perhaps because he used only these in his account on the categories, and [2] perhaps because from two of these one can easily gain the knowledge of those which are opposed to them. This is because if someone already knows that the *homonūma* agree in name but differ in *logos*, he will also know that the *poluōnuma* have the *logos* in common but their names are different. Again, if someone already knows that the *sunōnuma* agree in both, he will also know that the *heterōnuma* differ in both. So, perhaps one could state correctly in this way taking a guess at why Aristotle presents an abridged account, [3] but, as also Syrianus the philosopher thought, it is more correct to observe that the two, the *poluōnuma* and the *heterōnuma* are taken up for speech practices rather than for an inquiry into the things [*pragmatōn*]; this is why these [sc. the *poluōnuma* and the *heterōnuma*] will be discussed more appropriately in rhetorical arts and in other disciplines [*pragmateiais*] of this sort.

In this passage, Simplicius provides three reasons for why Aristotle discussed only the *homōnuma*, the *sunōnuma*, and the *parōnuma* in the *Categories* and not also the *heterōnuma* and the *poluōnuma*. The reason attributed to Simplicius in al-Wahbī's T2 (3) is also found in Simplicius' commentary T3 (2). In fact, T2 (3) appears to be a close paraphrase of T3 (2).

Moreover, the reason attributed to Syrianus in al-Wahbī's T2 (2) is a close paraphrase of Simplicius' T3 (3) where Simplicius explicitly says that Syrianus too had this view. Among the citations identified by Türker, this is the only citation of Syrianus in al-Wahbī and it is conceivable that the conveyor of this Syrianus citation into Arabic did not have direct access to Syrianus' *Categories* commentary but found this view also attributed to Syrianus in Simplicius' commentary and recorded it as a reason proposed by Syrianus (instead of saying that Simplicius and Syrianus share this reason, as Simplicius' wording in T3 (3) suggests).

The reason attributed to Porphyry in al-Wahbī in T2 (1) is expressed more briefly by Simplicius in T3 (1) but it is not explicitly attributed to Porphyry in this passage by Simplicius. So, if the conveyor of the Porphyry citation in T2 (1) had access only to Simplicius' commentary, it would

be difficult to explain why he attributed the reason Simplicius presents in T3 (1) to Porphyry, but not the reason Simplicius presents in T3 (2). I went through all the citations of Porphyry in Simplicius' commentary on this part of the *Categories* recorded in Smith, and there is no other passage in Simplicius' commentary where Simplicius attributes the reason expressed in T3 (1) to Porphyry.

In fact, the passage citing Porphyry in al-Wahbī in T2 (1) is a close paraphrase of what Porphyry says on the same issue in his short *Categories* commentary:

T4 Porphyry, *Short Commentary on the Categories*, 60.34-61.3

Ἐ. Τίνων οὖν μέμνηται;

Α. Ὁμωνύμων, συνωνύμων, παρωνύμων· οὔτε δὲ τῶν πολυνύμων οὔτε δὲ τῶν ἑτερονύμων μέμνηται.

Ἐ. Διὰ τί;

Α. Ὅτι τούτων οὐκ ἔχρηζεν εἰς τὰ ἐξῆς, ὧν δὲ ἔχρηζεν τούτων ἐμνημόνευσεν.

Q: Which ones did he mention?

A: *Homōnuma*, *sunōnuma*, and *parōnuma*; he did not mention the *poluōnuma* or the *heterōnuma*.

Q: Why?

A: Because he did not use these in the following [discussion], but he mentioned [only] those which he used [in the following discussion].

It is quite likely that this idea was also expressed in Porphyry's *Ad Gedalium*. So, it appears that the conveyor of the Porphyry, Syrianus, and Simplicius citations in T2 into Arabic had access to (some or all of) Porphyry's short commentary on the *Categories*, or Porphyry's long commentary on the *Categories* (i.e., *Ad Gedalium*) in addition to (some or all of) Simplicius' commentary on the *Categories*.

The second text from al-Wahbī's commentary that I want to discuss is a short passage attributed to Simplicius in al-Wahbī's commentary on *Cat.* 2 1a24-5 where Aristotle briefly describes what he means by "in a subject [*en hupokeimenō(i)*]:" "[When I say] 'present in a subject,' I mean the

thing which, while being in something [*en tini*] although not as a part [of it], cannot be without/separate from [*chōris*] that in which it is.” Like the Greek commentators before him, al-Wahbī takes it that there are different ways in which things are said to be in something, and X’s being in Y as in a subject is a special case of being in something which satisfies the two quasi-differentiae Aristotle adds: X is in Y but (1) not as a part of it, and (2) X cannot be separate from Y. After this account presented by al-Wahbī on p.55, he adds a short passage he attributes to Simplicius in particular on the phrase “not as a part of it [*lā ka-juz’ minhu*]” in Aristotle’s characterization of “in a subject” quoted above:

T5 Al-Wahbī, *On the Categories*, p.55 lines 4-7, Türker, 104

وأراد بقوله "لا كجزء منه" لا من حده ولا من كميته. وقد عرّف سنبلقيوس عن معنى ما أورده أرسطوطالس بهذه العبارة فقال: العرض هو الذي يوجد في موضوع ما من غير أن يعرف شيئاً من ماهية جوهرة، ولا يمكن أن يفارقه مع بقاء ذاته به.

By saying “not as a part of it” he meant neither [as a part] of its definition nor of its quantity. Simplicius expressed what Aristotle presents by this expression as follows: an accident is present in a subject without explaining [*yu’arrifa*] anything of the quiddity of its substance and cannot be separated from it while the essence [of the accident] persists by it.

As far as I can see, this is not a direct translation of any passage in Simplicius’ commentary but it seems that this is a selective paraphrase of the following passage from Simplicius’ commentary on Aristotle’s characterization of “in a subject” at 1a24-5. This passage is part of Simplicius’ account where he goes through the twelve ways in which “in something” is said and by elimination he tries to show that Aristotle’s characterization applies only to the relevant case of being in a subject:

T6 Simplicius, *On Aristotle’ Categories*, 47.11-9

ἐπειδὴ οὖν τὰ ἐν τινι τὰ ἄλλα τὰ μὲν ὡς μέρη ἐστὶν ἐκείνου τοῦ ἐν ᾧ ἐστίν, ὡς τὸ κυρίως μέρος τοῦ ὅλου καὶ τὸ εἶδος τοῦ γένους ἢ γὰρ μέρος καὶ τοῦτο ἢ ὡς μέρος· ἀνεῖλεν δὲ καὶ τὸ ὡς μέρος ὁ Ἀριστοτέλης ἐπὶ τοῦ ἐν ὑποκειμένῳ, ἀλλ’ οὐχὶ τὸ μέρος μόνον· καὶ τὸ γένος δὲ τὸ κατατεταγμένον τοῦ εἶδους συμπληροῖ τὴν οὐσίαν αὐτοῦ ὡς ἐκ γένους καὶ διαφορῶν συγκειμένου καὶ γίνεται τὸ γένος μέρος τοῦ εἶδους καθάπερ τὸ εἶδος μετὰ τῆς

ὅλης μέρος γίνεται τοῦ συνθέτου, τὰ δὲ μέρη μὲν οὐκ ἔστιν, χωρίζεται δὲ τῶν ἐν οἷς ἔστιν, ὡς τὰ ἐν τόπῳ καὶ ἐν ἀγγείῳ καὶ ἐν χρόνῳ καὶ τὰ ἐν τέλει...

Since of the other things which are in something, some are so as parts of that thing in which they are, as the part in the strict sense of the whole and the species of the genus, for even this [sc. the species] is a part or is treated as a part [*ē meros... ē ὅς meros*]; in his account on “in a subject,” Aristotle added the negation also of “as a part,” not of “a part” alone. Moreover, the *katatetagmenon* genus of a species completes the substance of it [sc. the species] as it is composed of a genus and differentiae, and the genus comes to be a part of the species just as the form with the matter comes to be a part of the composite.

Some [other things which are in something] are not parts but they are separated from those things in which they are, like the things which are in a place or in a vessel or in a time period or the things which are ‘in’ an end [*ta en telei*]...

So, when Aristotle says that X is in Y as in a subject, of the senses of being in something, some does not work because X should not be in Y as a part. For example, the *katatetagmenon* genus is in its species, but not as in a subject because this genus is in its species as a part of it because this genus “completes [*sumplēroi*] the substance of it [sc. the species].” Also, when we say that X is in Y as in a subject, we cannot mean that X is in Y as, e.g., in place because even though X’s place is not part of X, X can exist separately from its place but X cannot exist separately from Y insofar as X is in Y as in a subject. There are also other passages above and below T6 where Simplicius says that if X is in Y as in a subject, i.e., X is an accident (with respect to Y), then X does not complete the substance of Y. It seems that the conveyor of the Simplicius citation in T5 paraphrased T6 in Simplicius’ *Categories* commentary or some other passages around T6 to put together under Simplicius’ authority a rather common view in the Aristotelian tradition that the things which are in something as in a subject are accidents, and accidents do not indicate the essence of their subjects (which are substances) and accidents cannot exist separately from their subjects.

The third group of texts from al-Wahbī’s commentary that I want to discuss are from his commentary on *Cat.* 3 1b16-20 which is on Aristotle’s claim that “the differentia of the different

genera [*tōn heterōn genōn*]⁶⁸⁶ which are not subordinate to each other are different in species.” In the discussion of this passage, al-Wahbī cites a number of Greek commentators (and al-Fārābī). In particular, he cites Alexander several times; after one of such citations of Alexander, al-Wahbī says that Simplicius agrees with Alexander on that point:

T7 Al-Wahbī, *On the Categories*, p.64 lines 3-6, Türker 105

وفسر الإسكندر قول أرسطوطالس في هذا الموضع على أنه أراد ب"الأجناس المختلفة التي ليس بعضها تحت بعض" القسمين الأولين فقط، وأراد بقوله "فإن فصولها مختلفة" المقومة والقاسمة جميعا. ووافقه على هذا الرأي سنبلقيوس.

Alexander interpreted Aristotle's statement in this passage as follows: by "the different genera which are not subordinate to each other" [Aristotle] meant the first two divisions only, and by his statement "their differentiae are different" he meant the constitutive and the divisive differentiae together.

Simplicius agreed with [Alexander] on this view.

The commentators disagree on whether when Aristotle talks about "the different genera which are not subordinate to each other" he means only the highest genera, i.e. the categories themselves (e.g., substance and quality), and the genera each of which is in a different category (e.g., animal and knowledge) or he also means the genera which are in the same category but one is not under the other (e.g., animal and plant). To answer this question, earlier in his commentary on p.62 at lines 5-10, al-Wahbī divides the genera which may be called different genera not subordinate to each other into four: first, the highest genera (i.e., the categories themselves), second, the genera each of which is under a different category, and the third and the fourth divisions comprehend the genera which are in the same category but one is not under the other. So when we are told in T7 that Alexander takes Aristotle to refer to "the first two divisions [*al-qismayn al-awwalayn*]" in the *Categories* passage under consideration, the reference is to the highest genera, and the genera each of which is under a different category.

⁶⁸⁶ Following the reading attested in the Greek commentators (ἐτέρων γενῶν) against the reading adopted in the OCT edition (ἐτερογενῶν, following the mss.) because the reading ἐτέρων γενῶν also underlies the Arabic translation by Ishāq used by al-Wahbī, i.e., الأجناس المخالفة (not مخالفة الأجناس or something like this which would translate ἐτερογενῶν). (That said, the lemma quoting this passage in the *Categories* commentary preserved in the Archimedes palimpsest reads ἐτερογενῶν (10.4, in *A Rediscovered Categories Commentary*)).

Also, it is a point of discussion among the commentators as to whether the differentiae of these genera which are said to be different in species are the constitutive differentiae of these genera or the divisive differentiae of these genera (e.g., rational is a constitutive differentia of human but it is a divisive differentia of animal). It is stated in T7 that Alexander thought that Aristotle means both the constitutive and the divisive differentiae of these genera in this passage.⁶⁸⁷

It is stated in T7 that Simplicius agrees with Alexander on both points, i.e., that when Aristotle talks about “the different genera which are not subordinate to each other” he refers to the highest genera and the genera each of which is under a different category, and that the differentiae of these genera which are said to be different in species are both the constitutive and the divisive differentiae of these genera. We can observe this in Simplicius’ commentary on this passage from the *Categories*:

T8 Simplicius, *On Aristotle’s Categories*, 56.16-57.7

Ἔτερα δὲ γένη ἐστὶν καὶ εἶδη καὶ διαφοραὶ τὰ ταῖς κατηγορίαις διαφέροντα, ὥστε καθ’ ἐκάστην κατηγορίαν καὶ γένη καὶ εἶδη εἶναι καὶ διαφοράς. καὶ ὑπάλληλα δὲ γένη, ὧν τὸ ἕτερον ὑπὸ τὸ ἕτερόν ἐστιν, ὡς ὑπὸ τὸ ζῷον τὸ πτηνόν ἐστιν· οὐχ ὑπάλληλα δέ, ὧν μηδέτερόν ἐστιν ὑπὸ τὸ ἕτερον, ὡς ζῷον καὶ ἐπιστήμη. ἐπειδὴ γὰρ τῶν γενῶν καὶ τῶν εἰδῶν τὰ μὲν ἐστὶν γένη μόνον, ὡς μὴ ἔχειν ὑπὲρ ἑαυτὰ γένος, ὥσπερ ἡ οὐσία· τὰ δὲ εἶδη μόνον, ὡς μὴ ἔχειν μεθ’ ἑαυτὰ εἶδος, ὥσπερ ὁ ἀετός· τὰ δὲ μεταξὺ τούτων, οἷον ζῷον καὶ ὄρνειον, ἃ καὶ εἶδη καὶ γένη ἐστὶν, εἶδη μὲν ὡς πρὸς τὰ πρὸ ἑαυτῶν, γένη δὲ ὡς πρὸς τὰ μετὰ ταῦτα· τὸ γὰρ ὄρνειον εἶδος μὲν ἐστὶν τοῦ ζώου, γένος δὲ τοῦ ἀετοῦ. ὑπάλληλα δὲ λέγεται, οὐχ ὅτι ἐκάτερον ὑπὸ τὸ ἕτερόν ἐστιν, ἐπεὶ οὕτω γε τὸ αὐτὸ τοῦ αὐτοῦ καὶ εἶδος ἔσται καὶ γένος, ἀλλ’ ὅτι τὸ ἕτερον μόνον ὑπὸ τὸ ἕτερον. ὅταν δὲ μηδέτερον ὑπὸ τὸ ἕτερον ᾖ, τότε οὐκ ἔστιν ὑπάλληλα, ὡς ζῷον καὶ ἐπιστήμη· ἐκάτερον μὲν γὰρ γένος ἐστὶν, οὔτε δὲ ἡ ἐπιστήμη τοῦ ζώου εἶδος ἐστὶν οὔτε τὸ ζῷον τῆς ἐπιστήμης. ὄντων οὖν ἐτέρων γενῶν καὶ τῶν μεταξὺ τοῦ τε ἀνωτάτου γένους καὶ τοῦ κατωτάτου εἶδους καὶ μέντοι τῶν ἀνωτάτω τῶν κατὰ τὰς κατηγορίας, ὅταν λέγῃ τῶν ἐτέρων γενῶν, καὶ τὰ ἀνωτάτω ληπτέον ὡς ὄντα ἕτερα γένη καὶ τὰ μεταξὺ, ὅταν μὴ ὑπάλληλα ᾖ, ὡς ζῷον καὶ ἐπιστήμη· καὶ γὰρ τὸ ζῷον μετὰ τὴν οὐσίαν τέτακται καὶ ἡ ἐπιστήμη μετὰ τὴν ποιότητα.

⁶⁸⁷ Alexander is not credited with these views explicitly in Simplicius’ commentary on the same passage from the *Categories*; so Simplicius does not seem to be the source of the Alexander citation in T7.

τούτων οὖν τῶν ἐτέρων καὶ μὴ ὑπάλλληλα γενῶν ἐτέρας εἶναι διαφοράς φησιν, οὐ μόνον τὰς διαιρετικάς, ἀλλὰ καὶ τὰς συστατικάς. ζῶου γὰρ διαφοραὶ διαιρετικαὶ τὸ λογικὸν καὶ τὸ ἄλογον ἢ πτηνὸν καὶ πεζόν, συστατικαὶ δὲ τὸ αἰσθητικὸν * * *. τῆς δὲ ἐπιστήμης οὐκ εἰσιν αὗται διαφοραί.

Genera, species, and differentiae are different if they differ in category so that [each of such] genera, species, and differentiae would be in each category. Genera are subordinate to each other if one is under the other, as winged [animal] is under animal. However, they are not subordinate to each other if neither is under the other, like animal and knowledge. For of genera and species, some are genera only, as they do not have a genus above themselves, like substance, others are species only, as they do not have a species after themselves, like eagle, while others are between these, for example, animal and bird, which are both species and genera, i.e., they are species in relation to the things that are before themselves and they are genera in relation to the things which are after these; for bird is a species of animal, but is the genus of eagle. They are said to be subordinate to each other not because each one is under the other, since in this way the same thing would be both a species and a genus of the same thing, but because just one of them is under the other. When neither is under the other, then they are not subordinate to each other, like animal and knowledge; for each is a genus but neither is knowledge a species of animal nor is animal of knowledge.

Since this is the case, there are different genera, both those which are between the highest genus and the lowest species, and the highest [genera], i.e., the categories [themselves]; so, when [Aristotle] speaks of “of the different genera,” we should understand as different genera both the highest as well as the intermediate ones, when they are no subordinate to each other, like animal and knowledge; for animal is placed after substance but knowledge is placed after quality. So he says that the differentiae of these genera which are different and not subordinate to each other are different, not only their divisive [differentiae] but also their constitutive [differentiae]; for the divisive differentiae of animal are rational and irrational or winged and land [animal], and its constitutive [differentiae] are sensitive * * *. Yet, these are not differentiae of knowledge.

Also, further down at 57.22-58.1 Simplicius presents Herminus' view which takes "the different genera which are not subordinate to each other" to refer to the genera under the same category of which one is not subordinate to the other (e.g., animal and plant) too;⁶⁸⁸ disagreeing with Herminus, Simplicius confirms that Aristotle talks about the genera which do not share any higher genus, i.e., the categories themselves and the genera each of which is under a different category (58.1-7; also see 58.19-21).

Finally, on the same passage from the *Categories*, and in particular commenting on Aristotle's claim that the differentiae of these genera "are different in species [*mukhtalif fi al-naw*]," among other commentators,⁶⁸⁹ al-Wahbī cites Porphyry:

T9 Al-Wahbī, *On the Categories*, p.66 lines 1-4, Türker 106

وقال فرفورئوس: أراد به الفصول المولدة لأنواعها القاسمة لها، لا التي تولد النوع كالذكر والأنثى.
فأما المثال الذي أورد أرسطوطالس فإنه في الأجناس الغير العالية التي هي من مقولات مختلفة وفي الفصول
القاسمة.⁶⁹⁰

Porphyry said: by this he meant the differentiae which generate the species [of the genera under consideration] and divide [these genera], not [the differences] which generate the species as the male and the female.

⁶⁸⁸ This view is paraphrased and attributed to Herminus in al-Wahbī, p.64 line 7 - p.65 line 2 (= Türker, 105) and p.65 lines 11-3 (= Türker, 106) (in particular, compare Simplicius 58.20 "οἱ περὶ τὸν Ἑρμῖνον" and al-Wahbī p.65 line 13 (talking about Herminus) "وهذا التفسير موافق لمذهبه"). Also, the view explicitly attributed to Iamblichus in Simplicius at 59.32-3 is attributed to Iamblichus in al-Wahbī p.65 lines 14-5 (= Türker, 106) (additionally, although Simplicius does not attribute Herminus' view to Iamblichus, in al-Wahbī Iamblichus is presented as holding basically the same view as Herminus (p.65 lines 14-5 and line 3); this conflation seems to be due to the fact that Herminus' view is paraphrased in al-Wahbī as making a distinction between the differentia of the species and the differentia of the genus, and in the passage attributed to Iamblichus in Simplicius, Iamblichus is said to call the constitutive differentiae of the genus the generic differentiae (*genikas*) and its divisive differentiae the specific differentiae (*eidikas*)). I intend to discuss these passages in greater detail in my future work expanding on this appendix.

⁶⁸⁹ Namely, Alexander, Herminus, and Iamblichus. I briefly mentioned the Herminus and the Iamblichus passages in the previous footnote. Unlike Herminus and Iamblichus, the view attributed to Alexander here in al-Wahbī (p.65 lines 7-10 = Türker 106) is not explicitly attributed to Alexander in the corresponding commentary in Simplicius; so again, al-Wahbī's source for the citations from Alexander seems to be independent from Simplicius' commentary.

⁶⁹⁰ It is not fully clear to me whether this second sentence should be considered part of the Porphyry citation as this factual remark about the character of Aristotle's examples can be made by al-Wahbī too. Türker considers this sentence part of the Porphyry citation.

So the example presented by Aristotle concerns the genera which are not the high [genera] and are from different categories and it concerns the divisive differentiae.

In this passage, Porphyry is credited with holding the view that the differentiae of these genera in Aristotle's passage under consideration are the ones which "generate [*muwallida*]" the species of these genera and divide these genera, and Aristotle does not mean the differences "which generate the species as the male and the female." In the part of Porphyry's short commentary dealing with *Cat.* 3 1.b16-24 (sc. 81.26-86.4), Porphyry does not say that when Aristotle talks about the differentiae of the different genera of which one is not under the other he talks exclusively about the divisive differentiae of these genera. Yet, there is a quote from Porphyry's *Ad Gedalium* in Simplicius commentary which seems to suggest this and the issue in Simplicius is precisely to explain what Aristotle means when he says that these differentiae are "different *in species*;" recall that this is also the interpretive issue on which al-Wahbī cites Porphyry (among the other Greek commentators):

T10 Simplicius, *On Aristotle's Categories*, 58.7-14

ὁ μέντοι Πορφύριος τῶν ἐτέρων γενῶν ἐτέρας τῷ εἶδει τὰς διαφορὰς εἰρησθαί φησιν, διότι τῶν ὑπὸ τὰ ἕτερα γένη εἰδῶν ἕτεραι εἰσιν αἱ διαφοραί· ἕτερα γὰρ γένη ζῷον καὶ ἐπιστήμη καὶ τοῦ μὲν ζώου εἰδὸς ἐστὶν ὁ ἄνθρωπος, τῆς δὲ ἐπιστήμης ἡ μουσική, καὶ εἰσιν ἕτεραι τούτων αἱ διαφοραί, ὥστε εἴη ἂν λέγων ὅτι τῶν ἐτέρων γενῶν καὶ μὴ ὑπάλλληλα τεταγμένων αἱ κατὰ τὰ εἶδη διαφοραὶ ἕτεραι. κάλλιον δὲ ἴσως τὰς εἰδοποιούσας ἀκούειν, ὥς καὶ αὐτὸς ὁ Πορφύριος προῖων ἀξιοῖ.⁶⁹¹

However, Porphyry says that the differentiae of the different genera were said to be different in species [*tō(i) eidei*] because the differentiae of the species under different genera are different. For animal and knowledge are different genera, and human is a species of animal and the musical [art] [*hē mousikē*] of knowledge. The differentiae of

⁶⁹¹ Also see 14.23-30 in the Archimedes Palimpsest which is very close to T10 in Simplicius citing Porphyry (in *A Rediscovered Categories Commentary*); unfortunately, this passage is the very end of the last page of the fragment of the Greek commentary on the *Categories* found in the Archimedes Palimpsest and what we have ends rather abruptly; so even if we assume that this fragment is a fragment from *Ad Gedalium*, at the end of this fragment found in the Archimedes Palimpsest (namely 14.23-30), we do not have anything of note to add to Simplicius' paraphrase. it is possible that (assuming that this fragment is a fragment of *Ad Gedalium*) right after the passage which Simplicius paraphrases and with which the fragment ends, Porphyry said something about the male and the female as we have in the view attributed to Porphyry in al-Wahbī in T9.

these are different so that [Aristotle] would be saying that of the genera which are different and are not placed under each other, the differentiae concerning the species [*kata ta eidē*] are different, but presumably it would be better to understand [these differentiae] as the species-producing [differentiae] [*tas eidopoious*], as Porphyry himself goes on to hold [*proiōn axioi*].

It comes across from this account of Porphyry cited in Simplicius that Porphyry thinks that the relevant differentiae are the constitutive differentiae of the species falling under the different genera under consideration, i.e., the divisive differentiae of these genera. So the basic idea of T9 in al-Wahbī is also expressed in T10 in Simplicius. That said, in the Simplicius account, these differentia are not called “generating” the species of the genera under consideration as we find in the al-Wahbī account; this language could be prompted by Simplicius’ observation at the end of T10 that “presumably it would be better to understand [these differentiae] as the species-producing [differentiae] [*tas eidopoious*], as Porphyry himself goes on to hold [*proiōn axioi*].” Although Simplicius does not quote Porphyry talking about the species-producing differentiae, in Porphyry’s comments in his short commentary on *Cat.* 3 1b20-4 which comes right after the *Categories* passage under consideration, Porphyry talks about the species-producing differentiae (85.11-8). In this passage, Porphyry distinguishes the constitutive differentiae of a kind from its divisive differentiae and he calls the constitutive differentiae species-producing (*eidopoioi*). For example, ensouled (*empsuchon*) and perceptive (*aisthētikon*) are the constitutive or species-producing differentiae of animal; animal is a species under substance, and when ensouled and perceptive are added to substance, we obtain animal as a species under substance. The constitutive or species-producing differentiae of a kind are “generative and productive [*gennētikai kai apotelestikai*]” of that kind. Accordingly, if we take a genus and a species under it, the constitutive differentiae of the species which are generative and productive of the species are the divisive differentiae of the genus. So, it is possible that the “generative [*muwallida*]” in the al-Wahbī passage T9 is not a gloss on “*eidopoioi*” differentiae mentioned at the end of Simplicius’ account of Porphyry in T10, but perhaps with the prompting of this remark by Simplicius, the conveyor of the Porphyry passage in al-Wahbī took this wording of the constitutive differentiae of the species under a genus as the differentiae “*muwallida*” of these species from Porphyry’s characterization of the *eidopoioi* differentiae in his short commentary on

the *Categories*; alternatively, it is also possible that he took this wording from Porphyry's long commentary on the *Categories*.

The remark in the al-Wahbī passage T9 that these differentia are not the differences “which generate the species as the male and the female” is neither in Simplicius nor in Porphyry's short commentary on the *Categories*. Although what this means is not clarified in al-Wahbī, it is possible that the point is to warn the reader so that he does not confuse the generation (*tawlīd*) of a species by its constitutive differentiae with the more literal generation of an animal by sexual reproduction; in this second sense, the difference responsible for the generation of the animals with sexual reproduction would be the difference between the male and the female. In any case, if the conveyor of this passage into Arabic used only Simplicius or Simplicius with Porphyry's short commentary, it is possible that the conveyor himself (or perhaps al-Wahbī) added this remark as a gloss to prevent the misunderstanding of what is meant by the *fuṣūl* that *generate* the species. Alternatively, it is possible that this remark had its source in Porphyry's long commentary on the *Categories* and the conveyor of this passage took it from Porphyry's long commentary.

In short, concerning the textual source of the Porphyry citation in T9 in al-Wahbī, we have three options. First, the conveyor of this passage into Arabic used the Porphyry citation in Simplicius in T10 and the cautionary remark about these differentiae not being the differences “which generate the species, like the male and the female” is added as a gloss by the conveyor (or al-Wahbī). The second option is that the conveyor had access to both this passage from Simplicius and the mentioned passage from Porphyry's short commentary and again he (or al-Wahbī) added the cautionary remark as a gloss. The third option is that the conveyor used the relevant passages in Porphyry's long commentary (maybe along with T10 in Simplicius), and the cautionary remark could again be a gloss by the conveyor (or al-Wahbī) or the conveyor could find it in Porphyry's long commentary.

The fourth text from al-Wahbī is from his commentary on *Cat.* 5 3b10-23. After al-Wahbī presents his interpretation of this passage from the *Categories*, he announces that he will present statements (*aqāwīl*) of the commentators to aid the reader's understanding of this text from Aristotle (p.104 lines 12-4). Then al-Wahbī presents passages attributed to Porphyry and a few Arabic commentators. There are two passages attributed to Porphyry back to back:

قال فورفوريوس: أراد أن الأبيض والأسود لا بنسبة كيفية محدودة، لا كيفية إنسان ولا كيفية ثور ولا كيفية جواهر
آخر من الكيفيات التي <هي> في كل واحدة من جمل الجواهر.

ثم قال: وليست هذه خاصة لجميع الجواهر لأن الأجناس والأنواع ليست تدل على شيء محدود مشار إليه، إنما تدل
على شيء له حال من الأحوال.

Porphyry said: [Aristotle] meant that white and black do not concern some determinate⁶⁹²
quality [*lā bi-nisbat kayfiyya maḥdūda*], that is, neither the quality of human, nor the
quality of ox, nor the quality of some other substance among the qualities which are
about⁶⁹³ every group⁶⁹⁴ of substances [*fī kull wāḥida min jumal al-jawāhir*].

Next [Porphyry] said: this is not an *idion* for all substances because the genera and the
species do not denote a determinate particular [*mushār ilayhi*], but they denote only
something in a particular condition.

The second passage in T11 summarizes the main point of the *Categories* passage under
consideration that it is not the *idion* of substance to denote a particular (*tode ti* = *mushār ilayhi*
(in T11) = *maqṣūd ilayhi bi-l-ishāra* (in Ishāq's translation of the *Categories*, also used by al-
Wahbī)) because secondary substances do not denote *tode ti* but rather some quality (*poion* =
kayfiyya (in T11) = *ayy shay'* (in Ishāq's translation)). That said, more specifically, this second

⁶⁹² It seems that "*maḥdūda*" here is a remnant of an expression in Porphyry reflecting Aristotle's word "*aphorizein*" in his claim that a secondary substance "determines [*aphorizein*] the *poion* about substance" at 3b19-20 (also quoted below in the body of the dissertation); for this reason, I translate the "*maḥdūda*" here as "determinate." We might also consider adding "*fī al-jawhar*" after "*maḥdūda*" assuming that the conveyor of this passage originally wrote translating something like ποῖον περὶ οὐσίαν ἀφορίζόμενον. Alternatively, as can be seen in T13 below, it is possible that the conveyor expresses Porphyry's talk of οὐσιώδης ποιότης; if this is the case, we should assume that جوهريّة after كيفية محدودة fell out. Ishāq translates "*aphorizein*" at 3b20 as "*yuqarrirāni*," so if I am right that "*maḥdūda*" in this Porphyry citation ultimately reflects Aristotle's language of "*aphorizein*," "*maḥdūda*" must be from a source other than Ishāq's translation of the *Categories*. If I am right about this, this would be another example of the terminological differences between Ishāq's translation and the passages attributed to Porphyry in al-Wahbī: e.g., *tode ti* is translated as *maqṣūd ilayhi bi-l-ishāra* by Ishāq but as we see in this passage, the Arabic adaptation of Porphyry seems to render it as *mushār ilayhi*; similarly, Ishāq renders *poion* as *ayy shay'* but the Arabic adaptation of Porphyry seems to render it as *kayfiyya* (or *kayf?*) or perhaps as *shay' lahu ḥāl min al-aḥwāl* (although, as I explain below, I think that this is more likely a translation or paraphrase of *toionde*); for another example, see *istilqā'* in T18 below and the following discussion.

⁶⁹³ It seems that "*fī*" here reflects Aristotle's language of "*peri ousian to poion*" at 3b20 (the sentence containing this phrase is translated below in the body of the dissertation); for this reason, I translate the "*fī*" here as "about."

⁶⁹⁴ It is possible, though far from certain, that "*jumla*" here reflects Porphyry's "*koinotēs*" (a common feature or generality in the sense of a universal) in T13 below.

passage seems to be a paraphrase of the following passage in Porphyry's short commentary (or a paraphrase of the corresponding passage in Porphyry's long commentary):

T12 Porphyry, *Short Commentary on the Categories*, 96.2-9

Ε. Δεῖξον οὖν καὶ ἄλλο δοκοῦν ἴδιον τῆς οὐσίας, οὐκ ὄν δέ.

Α. Τὸ τόδε τί φημι σημαίνειν· ὅταν γὰρ εἶπω Σωκράτης, τόδε τι σημαίνω.

Ε. Ἄρα οὖν ἐπὶ πάσης οὐσίας ἔστι κατηγορῆσαι τὸ τόδε;

Α. Οὐδαμῶς· οὐκέτι γὰρ ἐπὶ τῶν δευτέρων οὐσιῶν ἔστιν φάναι τὸ τόδε ἀλλὰ μᾶλλον τὸ τοιόνδε· ὁ γὰρ ἄνθρωπος καὶ τὸ ζῷον οὐκ ἔστιν ἀφωρισμένου τινὸς καὶ ἐνὸς δηλωτικόν·

Q: So, present another thing which appears to be an *idion* of substance but in fact is not.

A: I claim that it is to denote a particular [*tode ti*]: when I say ‘Socrates’, I denote a particular.

Q: Then, can “*tode [this]*” be applied [*katēgorēsai*] to every substance?

A: Not at all! To the secondary substances, it is no longer possible to apply [*phanai*] “*tode*” but rather [we should apply] “*toionde [of this sort]*.” For human and animal are not indicative of one determinate thing.

In particular, the claim attributed to Porphyry in the second passage in T11 that the secondary substances “do not denote a determinate particular [*laysat tadullu ‘alā shay’ maḥdūd mushār ilayhi*]” seems to be a translation or a paraphrase of “not indicative of one determinate thing [*ouk estin aphōrismenou tinos kai henos dēlōtikon*]” in T12 in Porphyry's short commentary. Also, “something in a particular condition [*shay’ lahu ḥāl min al-aḥwāl*]” in T11 seems to be a translation or a paraphrase of “*toionde*” in T12.

The first passage in T11 in al-Wahbī attributed to Porphyry is also very short but it has some distinctive details. This first passage seems to comment more directly on *Cat.* 3b18-21: even though the secondary substances denote some *poion*, they do not simply denote *poion*, like white (*to leukon*) does; rather, a secondary substance “determines [*aphorizei*] the *poion* about substance [*peri ousian*] for they denote some substance qualified in some way [*poian gar tina ousian*].” The first passage in T11 seems to cite an explanation by Porphyry that a quality like

white (*al-abyad*) or black (*al-aswad*) is not a quality *of substance* in the way that the secondary substances are qualities *of substance* and are not qualities *simpliciter*. It is distinctive about the first passage in T11 that although Aristotle's examples in the underlying *Categories* passage are white for the pure quality, and human and animal for the secondary substances, in the first passage in T11, the examples of the pure quality are white *and black*, and the examples of the secondary substances are human *and ox*. In his commentary on *Cat.* 5 3b10-23 at 102.11-105.22, Simplicius does not mention Porphyry explicitly; also Simplicius does not mention black and ox among his examples. Both black and ox are in fact mentioned in Porphyry's discussion dealing with 3b18-21 in his short commentary, but the text seems to be corrupt here and this prevents us from seeing Porphyry's full account of how the way in which the secondary substances like human and ox are said to be qualities differs from the way in which qualities simpliciter like white and black are said to be qualities. Nevertheless, from the text we have, it is clear that Porphyry thinks that a secondary substance denotes a common feature or a universal (*koinotēs*) comprehending particular substances and that it denotes a substantial quality (*ousiōdēs poiōtēs*):

T13 Porphyry, *Short Commentary on the Categories*, 96.14-23

Ε. Τί οὖν ἐστὶν ὃ ἔφη· οὐχ ἀπλῶς δὲ τὸ ποιὸν σημαίνει ὁ ἄνθρωπος καὶ τὸ ζῷον ὥσπερ τὸ λευκόν, ἀλλὰ περὶ οὐσίαν τὸ ποιὸν ἀφορίζει· ποιὰν γάρ τινα οὐσίαν σημαίνει; καὶ γὰρ τὸ λευκὸν καὶ τὸ μέλαν καὶ ὅσαι εἰσὶ ποιότητες περὶ οὐσίαν ἀφορίζουσι τὸ ποιόν· οὐ γὰρ ἄνευ οὐσίας δύνανται εἶναι, ἀλλ' ἐν αὐτῇ εἰσιν.

Α. Λέγει δὲ ὅτι οὐχ ἀπλῶς ποιότητα παρίστησιν ὁ ἄνθρωπος ἀλλὰ δύο τινὰ τοῦλάχιστον· οὐσιώδη γὰρ ποιότητα καὶ κοινότητα τῶν ὑποβεβλημένων οὐσιῶν δηλοῖ. τὸ δὲ λευκὸν οὔτε οὐσιώδη ποιότητα παρίστησιν οὔτε ἀνθρώπου οὔτε βοῶς οὔτε λίθου οὔτε ἄλλης οὐδεμιᾶς οὐσίας κοινότητα * * *

Q: Then, what does it mean when he said that human and animal do not denote a quality [*poion*] simpliciter just as white does, but they determine a quality [*poion*] about substance for they denote a substance qualified in some way [*poian gar tina ousian*]? For also white, black, and all the qualities [*poiōtētes*] determine a quality [*poion*] about substance as they cannot exist without a substance but are present in it.

A: He claims that human does not present a quality [*poiotēta*] simpliciter but [it presents] at least two things: it denotes a substantial quality [*ousiōdē poiotēta*] and a common feature of the subject substances [*koinotēta tōn hupobēlēmenōn ousiōn*]. By contrast, white does not present a substantial quality nor a common feature of human or of ox or of stone or of some other substance * * *⁶⁹⁵

So it is possible that the first passage in the Porphyry citation in al-Wahbī in T11 is based on the full account in Porphyry's short commentary a truncated version of which we have and is reproduced here as T13, or it is based on the corresponding account in Porphyry's long commentary.

Further down in al-Wahbī, on p.106 lines 9-17 there is a quote or paraphrase from Abū Bishr Mattā on the same issue from the *Categories* and at the end of this passage attributed to Abū Bishr, al-Wahbī remarks on p.107 line 1 that “this agrees with Porphyry's statement” (= Türker 109). A comparison between this quote or paraphrase from Abū Bishr and T13 suggests that no distinctive detail in the paraphrase or quote from Abū Bishr is paralleled in T13. So either al-Wahbī remarks on some general similarity between Abū Bishr's and Porphyry's interpretation of the *Categories* passage under consideration (as we find in T11) or al-Wahbī or his source makes this remark based on the similarity between some distinctive details in the Abū Bishr passage and the corresponding non-extant passage in Porphyry's short commentary or in Porphyry's long commentary. So either this remark (sc., “this agrees with Porphyry's statement”) is uninteresting, or it does not provide us a verifiable evidence on the availability of Porphyry's long or the short commentary on the *Categories* in Arabic; for this reason, I am not discussing this Abū Bishr passage in detail here.

The next citation from al-Wahbī is from his commentary on *Cat.* 5 3b33-4a9 where Aristotle claims and clarifies that substances do not seem to admit of more and less. Al-Wahbī quotes or paraphrases a passage from Abū Bishr Mattā which seems to spell out, in particular, Aristotle's qualification to his claim that substances do not admit of more and less at 3b34-9, namely that “I do not mean that a substance is not more a substance or less a substance than another substance (for it has been mentioned that this is the case), but that any substance is not said to be more or

⁶⁹⁵ More on this lacuna posited by the editor, see his note in the apparatus as well as n.203 on p.88 of the English translation by S. K. Strange in the Ancient Commentators on Aristotle series.

less that very thing that it is [*touth' hoper estin*]; for example if this substance is human, a person [*autos*] is not said to be more or less a human than himself or one person than another person, for one person is not more a human than another person.” After the mentioned passage in which Abū Bishr spells out this passage from the *Categories*, al-Wahbī adds that Abū Bishr expresses “the literal meaning” of the relevant passages in the *Categories* (*wa-huwa ṣāhir lafẓ al-kitāb*) and that “Porphyry too explained it [sc., *Cat.* 3b34-9] by [using the literal meaning of the relevant passages] [*wa-bihi fassarahu Furfūriyūs*]:”

T14 al-Wahbī, *On the Categories*, p.113 lines 3-7, Türker 110

قال متى: إنما أراد بذلك أنني لا أمتنع الأكثر والأقل في الجوهر بحسب قياس العمق الذي هو قياس الأجناس إلى الأنواع والأنواع إلى الأشخاص وإنما منعت ذلك في الجواهر التي من طبقة واحدة.
وهو ظاهر لفظ الكتاب وبه فسرهُ فرفورْيوس.

[Abū Bishr] Mattā said: by this he only meant, I do not deny [*amna 'u*] more and less concerning substance according to a vertical comparison [*bi-ḥasab qiyās al-'umq*] which is the comparison of the genera to the species, and the species to the individuals but I only denied this concerning the substances which are on the same level [*min ṭabaqa wāḥida*].

And this is the literal meaning of the book [*ṣāhir lafẓ al-kitāb*] and Porphyry too explained it [sc. *Cat.* 3b34-9] by [using the literal meaning of the relevant passages] [*wa-bihi fassarahu Furfūriyūs*].

Abū Bishr is credited with making the point that the claim that substances do not admit of more and less does not hold if substances are compared “according to a vertical comparison [*bi-ḥasab qiyās al-'umq*],” i.e., when we compare a genus with a species, or a species with an individual. Indeed, Aristotle states at 2b7-28 that an individual is more a substance than its species and genus because the species and the genus, i.e., the secondary substances, exist insofar as they are predicated of an individual, i.e., the primary substance (and not the other way around), and that a species is more a substance than its genus because the species better indicates what an individual under itself is than the genus and because the species is a subject for the genus. Abū Bishr is reported to add that the claim that substances do not admit of more and less apply only to the substances “on the same level [*min ṭabaqa wāḥida* = compare with *homostoichos* in T15 below].” What Simplicius says on this passage from the *Categories* (see, especially, 111.9-18) is

not distinctively close to the claim we find in T14; Simplicius mentions that Aristotle says that a species is more a substance than a genus, but Simplicius does not also mention that an individual is more a substance than the others; moreover, Simplicius does not present the cases in which substances admit more and less and the cases in which substances do not admit more and less in terms of the vertical vs. on the same level comparison we find in T14. The corresponding account in Porphyry's short commentary is much closer to the view attributed to Abū Bishr in T14:

T15 Porphyry, *Short Commentary on the Categories*, 97.7-24

Α. Τὸ μὴ ἐπιδέχεσθαι τὸ μᾶλλον καὶ τὸ ἥττον· οὐχ ἀπλῶς δέ, ἀλλὰ μετὰ διαστολῆς· ἢ γὰρ ἄτομος οὐσία οὔτε αὐτὴ ἐαυτῇ παραλαμβάνομένη οὔτε ἄλλη ὁμοίως ἀτόμῳ μᾶλλον ἢ εἴη ἢ ἥττον οὐσία οὔτε ἢ κατὰ τὸ εἶδος καὶ τὸ γένος οὐσία οὔτε ἐαυτῇ οὔτε ἄλλη παραλαμβάνομένη ὁμοστοίχῳ οὐσία μᾶλλον ἢ εἴη οὐσία ἢ ἥττον.

Ε. Εἰπὲ ἐπὶ παραδειγμάτων.

Α. Ὁ Σωκράτης ἄτομος ὢν οὐσία οὐκ ἔστιν ὁ τήμερον τοῦ αὔριον μᾶλλον ἢ ἥττον Σωκράτης οὐδὲ ὁ αὔριον τοῦ τήμερον ἢ τοῦ πρὸ ἡμερῶν δέκα. οὐδέ γε μᾶλλον ἢ ἥττον Σωκράτης οὐσία ἢ Πλάτων. οὐδὲ μὴν τὸ εἶδος ὁ ἄνθρωπος μᾶλλον <οὐσία> ἢ αὐτὸς ἐαυτοῦ γένοιτο [μᾶλλον οὐσία] ἢ ἄλλου [ἀνθρώπου].⁶⁹⁶ οὐκοῦν καθ' αὐτὸ τοῦτο, καθό ἐστιν οὐσία, μᾶλλον οὔτε ἐαυτοῦ οὔτε ἄλλου δόξειεν εἶναι οὐσία. τὸ μέντοι λευκὸν αὐτὸ ἐαυτοῦ μᾶλλον ἢ γένοιτο λευκότερον καὶ ἄλλου μᾶλλον ἢ εἴη λευκόν. ἄλλη μέντοι ἄλλης οὐσία ἐρρέθη εἶναι μᾶλλον, ὅταν μὴ ὁμόστοιχος ᾖ, ἀλλ' ἢ μὲν ἄτομος, ἢ δὲ γένος ἢ εἶδος. ἢ γὰρ ἄτομος οὐσία μᾶλλον τῆς κατὰ τὸ εἶδος καὶ τὸ γένος ἐρρέθη εἶναι οὐσία.

Ε. Τίνας <οὐσίας φῆς ὁμοστοίχους εἶναι;

Α. Ὁμοστοίχους φημὶ εἶναι τὰς ἀτόμους ταῖς ἀτόμοις καὶ τὰς εἰδικὰς ταῖς εἰδικαῖς καὶ⁶⁹⁷ τὰς γενικὰς ταῖς γενικαῖς.

⁶⁹⁶ I add οὐσία and excise μᾶλλον οὐσία and ἀνθρώπου in this sentence with S. K. Strange p. 90 n.213.

⁶⁹⁷ The editor of the Greek text, Busse, indicates that there is a lacuna of about 90 letters here. The passage put between angular brackets is his suggestion for the missing passage; in any case, the preceding passage in Porphyry's commentary and the relevant passages in the *Categories* make it clear that Porphyry means that individuals are *homostoichoi* substances with individuals, species with species, and genera with genera.

A: Not admitting more or less does not hold simpliciter but with a qualification [*meta diastolēs*]: when an individual substance itself is compared with itself or with another similarly individual substance, it would not be more or less a substance; when a substance as species or genus is compared with itself or with another substance on the same level [*allē(i) homostoichō(i) ousia(i)*], it would not be more or less a substance.

Q: State it with examples.

A: Even though Socrates is an individual substance, Socrates today is not more or less Socrates than himself tomorrow nor is Socrates tomorrow [more or less Socrates] than himself today or ten days ago. At any rate, Socrates is not more or less a substance than Plato. Indeed, the species human itself would not come to be more a substance than itself or from another [species]. So, this by itself, insofar as it is a substance, does not seem to be more a substance than itself or another [species]. But what is white [*to leukon*] itself can rather come to be whiter than itself and it can be whiter than another [thing which is white]. Nevertheless, [Aristotle] said that one substance is more a substance than another when they are not on the same level but one is an individual substance and the other is a substance as genus or species. For the individual substance was said to be more a substance than the substance as species or genus.

Q: Which <substances do you claim to be on the same level?

A: I claim that the individual substances are on the same level as individual substances, substances as species [*tas eidikas*] as substances as species, and > substances as genus [*tas genikas*] as substances as genus.

As with the previous cases, the conveyor of the Porphyry passage underlying the Porphyry citation in T14 in al-Wahbī might be using the corresponding passage in Porphyry's long commentary rather than this passage in his short commentary.

The sixth text from al-Wahbī that I want to discuss is a passage attributed to Porphyry in al-Wahbī's commentary on *Cat.* 5 4a10-21 where Aristotle states that "the *idion* of substance seems most of all to be that it is capable of admitting contraries while being one and the same in number" and starts to explain this claim. The commentary on this lemma in al-Wahbī seems to contain no comment by al-Wahbī himself but only quotes or paraphrases of other commentators,

T16 Al-Wahbī, *On the Categories*, p.114 line 10 - p.115 line 7, Türker 111⁶⁹⁸

وأما أن هذه الخاصة توجد لجميع الجواهر فلا يمكن أن نقول ذلك لأن الأجرام السماوية لا تقبل السكون الذي هو ضد الحركة ولا شيئاً من الاستحالات والتغاير، وكذلك الجواهر الفاسدة أيضاً إذا كان أحد المتضادين طبيعة له وكيفية جوهريّة كالحرارة للنار والبرودة للثلج والرطوبة للماء.

وأما أنواع الجواهر الأول وأجناسها كالإنسان مثلاً والحيوان فإنما يقبلان الأضداد بما هما طبيعة وجوهر، وبمعنى أنه لما كان سقراط الذي هو إنسان ما قد يوجد تارةً مريضاً وتارةً صحيحاً، كان الإنسان موجوداً له ذلك إذ ليس بينهما من جهة الطبيعة فرق. فأما <من حيث> إنهما⁶⁹⁹ أمران عامان فلا يقبلان ذلك لأنه لا وجود للكلي إلا من حيث التصور وفي العقل.

Porphyry said: it is clear that this *idion* belongs only to substance because there is nothing other than substances which can be the same in number while admitting contraries truly, and if we speak of a fine deed and a base deed, the fine deed is not the same as the base deed in the way that a healthy person [continues to] exist as the same person when he is sick.

However, we cannot say that this *idion* belongs to all substances because the heavenly bodies do not admit rest which is the contrary of motion and [they do not admit] any alteration [*al-istiḥālāt*] or any [other] change [*al-tagḥāyīr*] whatsoever. It is similar with the corruptible substances too when one of the contrary pair is a nature for [the

⁶⁹⁸ Türker takes only the first paragraph to be attributed to Porphyry.

⁶⁹⁹ The ms. has  (105v line 18); the editor, Mongy, proposes to emend the part after فأما as من حيث إنها; we might assume that the gap after فأما indicates the fact that a copyist could not read a word (or a few words) and left the gap intentionally to indicate this fact; if so, this would lend support to the editor's emendation. Alternatively, this short gap after أما might be unintentional; then it would be more conservative to read the phrase as ... فأما ما هما with ما in the sense of "to the extent that;" in either case, the sense would be similar.

corruptible substance] or a substantial quality [*kayfiyya jawhariyya*] just as heat is for fire, coldness for snow, and wetness for water.

The species of the primary substances and their genera, e.g., human or animal, admit contraries only insofar as [the genus or the species] is a nature and a substance, and in the sense that as Socrates who is a particular human is sometimes sick and sometimes healthy, human exists as something to which that belongs [too] since there is no difference between the two [i.e., human and Socrates] in respect of nature [*min jihat al-tabī'a*]. Yet, insofar as [the genus and the species] are common things [*amrān 'āmmān*], they do not admit that because the universal [*al-kullī*] does not have being [*wujūd*] except insofar as conceptualization is concerned and in the intellect [*min ḥaythu al-taṣawwur wa-fī al-'aql*].

In this relatively long passage, three views are attributed to Porphyry and I put each in a paragraph. The first view is that the feature of admitting contraries while being one and the same in number belongs only to substances. The second view is that it does not belong to all substances; it does not belong to eternal substances like the heavenly bodies; also a specification of this feature is needed in the case of the corruptible substances too because the corruptible substances do not admit the contrary of a quality if this quality is “a nature for [the corruptible substance] and a substantial quality [*kayfiyya jawhariyya*], like hotness for fire, coldness for snow, and wetness for water.” The third view responds to an objection that the feature of admitting contraries while being one and the same in number does not belong to the secondary substances; the view attributed to Porphyry in T16 is that this is true in some respect and false in another. If the secondary substances, e.g., human and animal are considered “insofar as they are natures and substances” we can correctly say that they admit of contraries but insofar as they are considered as “common things [*amrān 'āmmān*],” they do not admit of contraries. As a justification for the last claim, it is added that this is “because the universal [*al-kullī*] does not have being [*wujūd*] except insofar as conceptualization is concerned and in the intellect [*min ḥaythu al-taṣawwur wa-fī al-'aql*].” All these views down to many of the examples (and plus some extra explanation) are found in the corresponding place in Porphyry’s short commentary on the *Categories*. Since these passages in Porphyry are relatively long, I am not going to reproduce the first two, but content myself with providing the references to these passages (the third

passage is reproduced below as T17). For the first view in T16, see 98.26-33 in Porphyry's short commentary; for the second view, see 98.34-99.18; for the third view (except for the justification for the last claim, i.e., that the universal does not have being except in the mind), see 99.18-31.

Simplicius too makes somewhat similar points in his commentary on the same passage from the *Categories* (see, 113.19-25, 114.23-115.10, 113.34-114.4); this is not surprising because as in many other places in Simplicius' commentary on the *Categories*, Simplicius presents views that can be found in Porphyry's extant short commentary because as I also mentioned towards the beginning of Section 2.b, Simplicius indicates at the beginning of his commentary that Iamblichus' commentary and Porphyry's long commentary on the *Categories* are his main sources and more specifically, Iamblichus, and Porphyry directly or through Iamblichus function as the substrate of Simplicius' commentary. Nevertheless, Simplicius cannot be the source of T16 in al-Wahbī because Simplicius does not explicitly attribute to Porphyry these similar views found in Simplicius' commentary and the similarity between the details and the order of the account in T16 and those of the account in Porphyry's short commentary is much greater than the similarity between the details and the order of the account in T16 and those in the mentioned passages in Simplicius' commentary.

So, if we ignore the very last claim in T16 provided to justify Porphyry's view that the genus and the species as the secondary substances are not said to admit of contraries insofar as they are considered as "common entities [*amrān 'āmmān*]," i.e., the claim "because the universal [*al-kullī*] does not have being except insofar as conceptualization is concerned and in the intellect," T16 could be a summary of the mentioned passages in Porphyry's short commentary or it could also be a summary of the passages in Porphyry's long commentary which correspond to these mentioned passages in his short commentary. That said, this last claim is not in the corresponding account in Porphyry's short commentary. In the corresponding passage in his short commentary, Porphyry considers secondary substances in two ways: insofar as they are substances, and insofar as they are common things or universals, and he says that only in the first respect the secondary substances are said to admit of contraries:

T17 Porphyry, *Short Commentary on the Categories*, 99.18-31

ὥς δὲ ἡ μία τῶ ἀριθμῷ ἢ ἄτομος τοῦτο πέπονθε, οὕτως καὶ αἱ δεύτεραι· εἰ γὰρ ὁ
Σωκράτης σπουδαῖος καὶ ἄφρων, καὶ ἄνθρωπος ἂν εἴη σπουδαῖος καὶ ἄφρων καὶ ζῶον διὰ

τὸ τὸν Σωκράτην καὶ ἄνθρωπον εἶναι. ὥς οὖν οὐσία, εἶπερ καὶ ἄνθρωπος οὐσία καὶ τὸ ζῷον οὐσία, ἐπιδεκτικὸν καὶ ὁ ἄνθρωπος τὸ ζῷον τῶν ἐναντίων· ὥς δὲ καθόλου ὄντα οὐ ταῦτα ἂν εἶη ἐπιδεκτικά ἀλλὰ τὰ ὑπ' αὐτά. ὥσπερ τὸ χρῶμα οὔτε λευκὸν οὔτε μέλαν, ὑπ' αὐτὸ δὲ τὸ λευκὸν καὶ τὸ μέλαν,⁷⁰⁰ οὕτω δὲ καὶ ὁ ἄνθρωπος ἢ κοινὸν καὶ τὸ ζῷον ἢ κοινὸν καὶ κατὰ πλειόνων, οὕτω μὲν οὖν οὔτε φρόνιμος οὔτε ἄφρων οὔτε νοσῶν καὶ ὑγιαίνων, ὑπ' αὐτὰ δὲ καὶ οἱ φρόνιμοι καὶ οἱ ἄφρονες καὶ οἱ νοσοῦντες καὶ οἱ ὑγιαίνοντες. καθὸ μέντοι οὐσίαι καὶ ὁ ἄνθρωπος καὶ τὸ ζῷον τῶν ἐναντίων ἀνὰ μέρος εἰσὶ δεκτικά· ἐπινοεῖται γὰρ καὶ ὁ ἄνθρωπος, καθόσον ἐστὶν οὐσία, ἐπιδεκτικὸς τῶν ἐναντίων ποιότητων καὶ τὸ ζῷον· ὑπομένει γὰρ ἑκάτερα μένον τὸ αὐτό.

Just as the individual substance which is one in number has this feature [*touto peponthe*], the secondary substances too [have this feature]. For if Socrates is good and foolish, human and animal would be good and foolish too because Socrates is human. So since both human and animal are substances too, as a substance, human [or] animal is receptive of contraries. Insofar as they are universals, however, these are not receptive [of contraries] but the things under them are. Just as color is neither white nor black but white and black are under it, so are human *qua* a common thing and animal *qua* a common thing [said] of many things; in this way, they are neither intelligent nor fool, neither sick nor healthy, but under them there are people who are intelligent and the fools, the healthy ones and the sick ones. But insofar as human and animal are substances, they both are receptive of contraries in turn. For human or animal is conceived to be receptive of the contrary qualities to the extent that it is a substance; for it admits of [*hupomenei*] both [of the contraries] while remaining [*menon*] the same.

Porphyry specifies in this passage that insofar as the secondary substances like human are considered as a universal (*katholou*) or a common thing which is said of many things (*koinon kai kata pleionōn*), they themselves do not admit contraries but only the things under them (*hup' auta*) do; i.e., the universal human is not said to be sick and healthy, but only the particular humans are said to be sick and healthy in turn. Porphyry does not explain in this passage why the

⁷⁰⁰ As Porphyry clarifies in the following passage (99.31-100.3), the analogy with color here might be misleading because human *qua* substance itself admits contraries while remaining the same, while color *qua* color itself does not admit contraries while remaining the same; rather one color, say white, comes to be replaced by another color, say black.

secondary substances are not said to admit of contraries insofar as they are considered to be universals or common things while at the end of T16 in al-Wahbī citing Porphyry, an explanation is provided: this is “because the universal [*al-kullī*] does not have being except insofar as conceptualization is concerned and in the intellect;” that the existence of the universals depend on their particulars and that the universals are conceived from their particulars is a view Porphyry expresses elsewhere in his short commentary. First, during the discussion of Aristotle’s “said of” and “present in” relations in *Categories* 2, the questioner, i.e., the teacher in Porphyry’s short commentary says to the answerer, i.e., the student that he should leave aside the issue of why Aristotle says that the accidents “are [*einai*]” in a subject while the universals “are said [*legesthai*]” of a subject “because on the one hand, there *are* accidents just like substances, while, on the other hand, a universal’s *being said* is *not in respect of subsistence* [*en huparxei*, cf. *wujūd* at the end of T16] but it is said *insofar as conception is concerned* [*mechri epinoias*, cf. *min ḥaythu al-taṣawwur* at the end of T16]” (my emphasis) because this is a “deep [*bathus*]” issue which is not appropriate for the introductory level students (*tēs tōn eisagomenōn hexeōs*) to understand (75.24-9). Even though Porphyry says here that in the context of his short commentary the discussion of the ontological status of the universals should be put aside, he briefly touches upon the ontological status of the universals of the perceptible particulars below in his short commentary. The surrounding debate addresses the question of why Aristotle calls the individual substances primary substances and the universal substances secondary substances. In his explanation, Porphyry mentions, “...all the particular humans [*hoi kath’ hekaston anthrōpoi pantes*], from whom also the human predicated in common was conceived [*ex hōn kai ho koine(i) katēgoroumenos anthrōpos epenoēthē*], and the particular animals, through which [*di’ ha*] the animal predicated in common was conceived. [The particular humans or the particular animals] are indeed the causes of being [*aitia... tou einai*] for those which are predicated in common; for beyond the particulars it is not possible to understand [*noēsai*] ox or human or horse or in general animal. If from the *aisthēsis* of the particulars and by *dianoia* we attain what is in common [*to koine(i)*], which we no longer understand as a this something [*tode ti*] but as of this sort [*toionde*], in case the particular animals are taken away, the [animal] predicated of them in common will no longer be” (90.32-91.5).⁷⁰¹ So it is possible that the conveyor of the Porphyry passage in al-Wahbī reproduced above as T16 prepared his summary based on 98.26-99.31 in

⁷⁰¹ More on the surrounding discussion, see Section 2.b Footnote n.526.

Porphyry's short commentary and then as an explanation of why Porphyry says that the secondary substances taken as universals are not said to admit of contraries, the conveyor added based on 75.24-9 and 90.32-91.5 in Porphyry's short commentary that "the universal does not have being except insofar as *taṣawwur* is concerned and in the 'aql."

Another possibility, and perhaps a simpler explanation, is that the conveyor of the Porphyry passage in T16 was using the corresponding passage in Porphyry's long commentary which also contained some discussion of the ontological status of the universals right after Porphyry's claim that the secondary substances are not said to admit of contraries insofar as they are considered as universals. Indeed, Porphyry's long commentary on the *Categories* would provide greater space to say more on the ontological status of the universals and it is possible that the cautionary remark at 75.24-9 in his short commentary is meant to signal the difference between the intended audiences of Porphyry's short and the long commentaries in that the former is addressed to the people at the introductory level of philosophical education while the latter is meant for the adepts who can appreciate a more extensive discussion of a "deep" issue like the ontological status of the universals.

The seventh text from al-Wahbī that I want to discuss is from his commentary on the beginning of the relatives (*ta pros ti*) chapter of the *Categories*, and in particular on *Cat.* 7 6b11-14. Right after stating this lemma, al-Wahbī presents a passage attributed to Porphyry:

T18 Al-Wahbī, *On the Categories*, p.161 lines 4-10, Türker p.117⁷⁰²

قال فورفوريوس: لما كان الوضع وضعاً للموضوع، والموضوع إنما <هو> موضوع بالوضع، كان الوضع من الأمور المضافة، فأنواعه التي هي الاستلقاء والقيام والجلوس داخلة في باب المضاف. فأما فعل الإنسان الذي يقال به إنه يستلقي أو يقوم أو يجلس فليست من المضاف لأنها ليست من أنواع الوضع بل إنما هي أفعال سميت بأسماء مشتقة من الوضع والشئ الذي يشتق له الاسم من شيء آخر لا يكون هو هو ذلك الشيء.

Porphyry said: since a position [*wad*] is the position of what is put in a position [*mawḍū*] and what is put in a position is something put in a position only by virtue of the position, position is a relative; so its species, i.e., lying, standing, and sitting, fall in the

⁷⁰² Türker takes the following paragraph (p.161 lines 11-6) to be part of the Porphyry fragment, but I do not think this is the case. The main reason is that Aristotle's *anaklisis* and *anakeklisḥai* are translated using the verb *idṭaja* 'a by Ishāq and in the following paragraph at lines 11-6 this Arabic verb is used, but in the Porphyry fragment reproduced as T18, the same Greek terms are translated using the Arabic verb *istalqā*. More on this, see below.

class of the relative. As for the act [*fī* 'l] of a person by which it is said that he is lying, or he is standing, or he is sitting, it is not a relative because they are not species of position; rather they are acts which are called only by names derived from a position, and the thing whose name is derived from another thing is not that very thing.

This passage does not add anything substantial to what Aristotle says at 6b11-4 and right above on the relatives. But this passage makes two points that are not trivially in the underlying Aristotle passage. First, Aristotle says that position (*thesis* = *wadʿ*) is a relative and that it is said of something, but Aristotle does not explicitly state how its relative is called.⁷⁰³ In T18, the relative of *wadʿ* is specified as *mawḍūʿ*, what is posited or put in a position. So, we speak of a position in relation to something which is posited or put in that position, and we speak of something as posited or put in a position in relation to the position in which it is put. For example, we speak of standing in relation to the standing thing, and we speaking of a standing thing in relation to the standing that is its position.

Second, Aristotle says that *anaklisis* (lying = *iḍtijāʿ*, *istilqāʾ*), *stasis* (standing = *qiyām*), and *kathedra* (sitting = *julūs*) are the species of position and are also relatives (*Cat.* 7 6b11-2). This is repeated in T18. Next, Aristotle mentions the infinitives of the verbs whose verbal nouns are used to denote the species of position, namely *anakeklisthai*⁷⁰⁴ (to be lying), *estantai* (to be standing), *kathēsthai* (to be sitting) and Aristotle indicates that these things indicated by the infinitives are not positions but the terms for these are paronymous from the terms denoting some positions (6b12-4). Now, there is no infinitive separate from the verbal noun in Arabic and a range of the functions of both would be covered by the Arabic *maṣḍar*. So, someone who wants to translate the underlying Aristotle passage into Arabic faces a challenge; if he uses the *maṣḍars* (pl. in Arabic, *maṣādir*) for the first triplet of terms in the Greek text of this *Categories* passage, he should use different but related group of terms for the second triplet in the Greek text of this *Categories* passage. Moreover, he should render these two groups of terms such that the second group can be recognized as *paronymous* from the first group. As I briefly discussed in Chapter 1 Section 6 and Chapter 3 Section 1.f, al-Fārābī thinks that an Arabic *maṣḍar* is the paradigm form

⁷⁰³ Aristotle explicitly states at *Cat.* 7 6b2-6 that state (*hexis*), disposition (*diathesis*), perception, knowledge, and position are relatives and each is “that which is exactly what is said of other things [*touthʿ hoper estin heterōn legetai*] and not something else;” he adds, among others, that “a position is the position of something [*hē thesis tinos thesis*]” but he does not specify how this “something [*tis / ti*]” is called in general.

⁷⁰⁴ Or *anakeisthai* as found in the majority of the witnesses.

(*mithāl awwāl*) and the adjectives or the finite verbs from the same root (and in the same verbal form) are considered to be derived from that *maṣḍar*. This seems to reflect a wider grammatical convention in Arabic as the term “*maṣḍar*” itself suggests (literally meaning the place from which something originates, i.e., the source). Accordingly, in the translation of the *Categories* by Ishāq that is also used in al-Wahbī’s lemmas, the first triplet of terms are translated using the Arabic *maṣḍars* (*iḍṭijāʿ*, *qiyām*, *julūs*) while the second triplet are translated using the finite verbs (more precisely, the present indicative third person masculine singular): *yaḍṭajiʿu* ((he) is lying), *yaqūmu* ((he) is standing), *yajlisu* ((he) is sitting). It is also similarly translated in the passage attributed to Porphyry, i.e., T18, but for *anaklisis* and *anakeklisthai*, a different Arabic root is used (*istilqāʿ*, *yastalqī*). Like Aristotle in the underlying *Categories* passage, T18 also makes the point that this second group of three terms do not denote positions but they are paronymous from the first group of three terms which denote positions. But in addition, T18 also calls “*yastalqī* [(he) is lying],” “*yaqūmu* [(he) is standing],” and “*yajlisu* [(he) is sitting]” *acts* (*afʿāl*, sg. *fiʿl*) of the person who is lying or standing or sitting, i.e., the *mawḍūʿ* of this *waḍʿ*.

In Simplicius’ commentary on the underlying *Categories* passage, Simplicius explicitly cites Porphyry twice (66F and 67F in Smith) but neither expresses the views attributed to Porphyry in T18. So, Simplicius’ commentary cannot be the source of T18. That said, the views attributed to Porphyry in T18 are by and large expressed in a very similar language in Porphyry’s short commentary too:

T19 Porphyry, *Short Commentary on the Categories*, 113.10-28

* * *⁷⁰⁵ ἢ θέσις καὶ τὰ εἶδη τῆς θέσεως τῶν πρὸς τι· καὶ τὸ θετὸν θέσει θετόν, εἰ δὴ⁷⁰⁶ ἢ θέσις τῶν πρὸς τι, θετοῦ γὰρ θέσις ἢ θέσις ἂν εἴη.

Ε. Τίνα οὖν εἶδη θέσεως;

Α. Ἀνάκλισις, στάσις, καθέδρα· ἀνάκλις τε γὰρ ἀνακειμένου ἐστὶν ἀνάκλις καὶ ὁ ἀνακείμενος ἀνακλίνει ἐστὶν ἀνακείμενος, ἢ τε στάσις ἐστὼτός ἐστι στάσις καὶ ὁ ἐστὼς

⁷⁰⁵ For this lacuna, and the editor’s suggestion to fill it, see the apparatus. Also compare Strange’s note on this lacuna on p.115-6 n.324.

⁷⁰⁶ I follow Strange in emending the δὲ here in the Greek text into δὴ. As Strange points out, something is wrong with the printed Greek text and it requires an emendation.

στάσει ἐστὶν ἐστώς, ἢ τε καθέδρα τοῦ καθημένου ἐστὶ καθέδρα καὶ ὁ καθημένος καθέδρα ἐστὶ καθημένος.

Ἐ. Ἄρα οὖν ἐπειδὴ ἡ ἀνάκλισις τῶν πρὸς τι καὶ ἡ στάσις καὶ ἡ καθέδρα, καὶ τὸ ἀνακεῖσθαι ἢ ἐστάναι ἢ καθῆσθαι τῶν πρὸς τι ἂν εἴη;

Α. Οὐδαμῶς.

Ἐ. Διὰ τί;

Α. Ὅτι ἡ μὲν θέσις καὶ τὰ εἶδη τῆς θέσεως ἦν πρὸς τι, ταῦτα δὲ οὔτε θέσεις ἐστὶν οὔτε εἶδη ἐστὶν θέσεως ἀλλὰ παρώνυμα ἀπὸ τῶν εἰρημένων θέσεων. οὐδὲν δὲ τῶν παρωνύμων ταυτόν ἐστι τῷ ἀφ' οὗ παρωνόμασται· οὔτε γὰρ γραμματικὸς ταυτόν τῇ γραμματικῇ ἢ τε γυνὴ ὅταν ἀπὸ τῆς γραμματικῆς γραμματικὴ ρηθεῖη, οὐκ ἔστι παρώνυμον.

Ἐ. Τί οὖν ἐρεῖς τὸ καθεῖξεσθαι καὶ πῶς ἔχειν πρὸς τὸν καθημένον;

Α. Λέγω ὅτι συμβέβηκεν μὲν αὐτῷ, οὐ μὴν ἐπεὶ συμβέβηκεν τοῦτο τῶν πρὸς τι ἂν εἴη.

* * * Position and the species of position are relatives. What is to be put in a position [*to theton*] is *theton* by virtue of a position, if indeed position is a relative, because a position would be the position of a *theton*.

Q: Then what are some species of position?

A: Lying, standing, and sitting: lying is the lying of a person who lies [*anakeimenou*], and a person who lies is a person who lies by virtue of the lying [*anaklisei*]. Also, standing is the standing of a person who stands [*estōtos*], and a person who stands is a person who stands by virtue of the standing [*stasei*]. And, sitting is the sitting of a person who sits [*kathēmenou*], and a person who sits is a person who sits by virtue of the sitting [*kathedra(i)*].

Q: Then, since lying, standing, and sitting are relatives, could to be lying [*anakeisthai*], to be standing [*estanaí*], or to be sitting [*kathēsthai*] be a relative too?

A: Not at all.

Q: Why?

A: Because position and the species of position were [said to be] relatives, but these latter are neither positions nor species of position but they are *parōnuma* from the mentioned positions. And no *parōnumon* is the same as that from which it is derived paronymously [*parōnomastai*]. For a grammarian [*ho grammatikos*] is not the same as [the art of] grammar [*grammatikē*] and when a woman is called grammarian [*grammatikē*] from [the art of] grammar [*grammatikē*],⁷⁰⁷ we do not have a case of a *parōnumon*.

Q: What will you say about to be sitting down [*kathezesthai*] and how does it relate to someone who sits down [*ton kathēmenon*]?

A: I claim that it is an accident of him [*sumbebēken men auto(i)*] but it is not the case that since it is an accident, it would be a relative.

Generally speaking, in this passage from Porphyry’s short commentary, Porphyry makes the points in the order in which they are made in the passage attributed to Porphyry in al-Wahbī in T18 but these points are also made in the same order but in a more condensed fashion in the underlying *Categories* passage too. It is more distinctive that just as in T18, Porphyry specifies the relative of position (*thesis*), calling it “the thing to be posited [*theton*].” Recall that the relative of position (*waḍʿ*) is called *mawḍūʿ* in T18. *Mawḍūʿ* is the passive participle of the verb *waḍaʿa* and more frequently used to translate *hupokeimenon*, but it is also an established practice in Arabic-Greek translations to translate the verbal adjectives like *theton* with the passive participle of the corresponding verb; for example, *aisthēton* is often translated as *maḥsūs*, and *noēton* as *maʿqūl*.

It is true that unlike in T18, in the passage from his short commentary Porphyry does not call what is denoted by the second group of the triplet of terms (i.e., *anakeisthai*, *estantai*, *kathēsthai*) *acts* of the people who are lying or standing or sitting; even though a related term of the same form *kathezesthai* (to be sitting down) is said to indicate an accident’s being attributed to the person who is sitting down (“*sumbebēken men autō(i)*”), this is short of calling it an *act* of this person. It is possible that in the corresponding longer discussion in Porphyry’s long commentary,

⁷⁰⁷ As Strange points out on p.116 n.329, Porphyry explains at 70.8-14 that since in the case of, e.g., a female musician (*mousikē*) and the art of music (*mousikē*) the form of the word does not change, unlike in the case of a male musician (*mousikos*), one of the conditions for paronymy is not satisfied (i.e., change of the form of the word (*metaschēmatismos tou onomatos*)) and hence a female musician (*mousikē*) is not said paronymously from the art of music (*mousikē*); instead, they are said homonymously.

he said more on this second group of terms that could be interpreted as taking what they signify as acts in some sense. Or the “acts” language might be introduced as a gloss by the conveyor of the Porphyry passage in T18, because, unlike Aristotle, if we want to be careful about distinguishing terms from what these terms signify, we might be interested in specifying the thing by which we apply the paronymous terms like “*yastalqī* [(he) is lying],” and it seems natural to call the thing by which we say that someone *yastalqī*, i.e., is lying, an act (*fiʿl*) of this person, especially since this term is a verb, and a verb is commonly called a *fiʿl* in Arabic.

In short, the source of the Porphyry citation in T18 is basically either Porphyry’s short commentary or his long commentary.

The final group of texts from al-Wahbī I want to discuss is from his commentary on the beginning of Aristotle’s chapter on quality in the *Categories*, namely *Cat.* 8 8b25-35. We know from Porphyry’s and Simplicius’ commentaries that some ancient manuscripts of Aristotle’s *Categories* have the title “on the qualified and quality [*peri poiou kai poiōtēs*]” (see Porphyry’s short commentary 127.22ff, Simplicius 207.27ff). According to a common Arabic translation of these two Greek words preserving the etymological connection between them, *poion* as an interrogative particle would be translated as *kayfa* and *poion* as a noun in the sense of quality would be translated as *kayf* and *poiōtēs* would be translated as *kayfiyya*. This is also how Ishāq translates the very beginning of this chapter of the *Categories*:

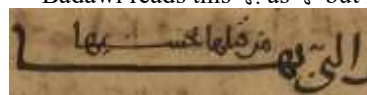
T20 *Cat.* 8 8b25, with Ishāq’s Arabic translation in *Manṭiq Aristū*

Ποιότητα δὲ λέγω καθ’ ἣν ποιοί τινες λέγονται

I call a quality that by which some people are said to be [people] of a sort [*poiōi*].

وأسمي بالكيفية تلك التي بها⁷⁰⁸ يقال في الأشخاص كيف هي.

⁷⁰⁸ Badawi reads this بها as لها but it is clearly بها in the ms. and بها makes good sense here as a translation of καθ’ ἣν:



(MS. Paris Ar. 2346 169v line 2). Right above the ي of التي, there is a clear point, which should go with the first letter of the next word, i.e., بها. As can be seen in this image, there is a gloss above بها specifying the sense of the preposition *bi*- here: “from which, according to which [من قبلها بحسبها].” This gloss is introduced into the translation when it is reproduced in al-Wahbī: وأسمي بالكيفية تلك التي بها ومن قبلها وبحسبها يقال في

I apply the term “quality” to these things by which one says how [*kayfa*] individuals [*al-ashkhās*] are.

The title *Fī al-kayf wa-l-kayfiyya* is both in the Paris ms. of the Arabic Organon which contains Ishāq’s translation of the *Categories* (169v line 1) as well as in the ms. of al-Wahbī at the beginning of his reproduction of the beginning of *Cat.* 8 as a lemma (131r line 14). In his commentary on this lemma, al-Wahbī first addresses the question of why the discussion of the category of quality follows that of relatives (p. 194 lines 5-12). Right after this, starting on p. 194 at line 13, he moves onto the next issue, namely, the explanation of the fact that “in this place [sc., in the title], [Aristotle] joined ‘*al-kayf*’ to ‘*al-kayfiyya*’.” On this issue, al-Wahbī quotes Alexander, Porphyry, and Abū Bishr. Here is the part containing the citations of Alexander and Porphyry:

T21 Al-Wahbī, *On the Categories*, 194 lines 13-8, Türker 121

فقال الإسكندر: هذا زيادة من بعض الناسخين وليس هو كلامه.

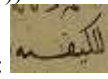
وقال فرفوروريوس: إنما ضم إلى الكيف الكيفية لينبّه على أن لفظة الكيف أعم دلالة من لفظة الكيفية لأن ذلك يقع على الكيفية وعلى الموضوع للكيفية⁷⁰⁹ الذي هو ذات الكيفية، إلا أنه مع ذلك لم يرد في هذا الموضع إلا مجرد الهيئة على بساطتها

So Alexander said: this an addition [*ziyāda*] by some copyist and is not his [sc. Aristotle’s] statement.

Porphyry said: [Aristotle] added [*damma*] “*al-kayfiyya*” to “*al-kayf*” in order to call our attention to the fact that the expression “*al-kayf*” has a more general denotation than the expression “*al-kayfiyya*” because [the former] is used for a quality [*al-kayfiyya*] and the subject of a quality [*li-l-kayfiyya*] which as that quality [*dhāt al-kayfiyya*]. However,

الأشخاص كيف هي (p.193 lines 12-3) (Mongy reads the بها here as لها, presumably under the influence of Badawi’s

edition because the ms. of al-Wahbī also has بها (131r line 15: )).

⁷⁰⁹ Mongy prints للكيف but it is clearly للكيفية in the ms. (131v line 13: ) and للكيفية makes better sense in this context.

despite this, in this place [sc. the title] he meant about this subject nothing but that whose condition [*hay'a*] is abstracted and taken simply [*illā mujarrad al-hay'a 'alā basāṭatihā*].

The commentators raise two issues about the purported title of the chapter on quality in the *Categories*. The first question is whether this title is authentic or added by people after Aristotle. The second question is why we have both *kayf* (*poion*) and *kayfiyya* (*poiotēs*) in the title, if the title is authentic. Porphyry and Simplicius address both issues. However, the set up to the Alexander and Porphyry citations in al-Wahbī in T21 is just about the second question, more precisely, about the question of why *al-kayf* is added to *al-kayfiyya* in this place, sc. the title. Alexander is credited with saying that “this is an addition by some copyists and is not his [sc. Aristotle’s] statement.” The “this [*hādhā*]” here must refer to the addition of *al-kayf* to *al-kayfiyya*; so the conveyor of these citations or al-Wahbī himself understood Alexander to be talking about the second question. In fact, Simplicius explicitly credits the companions (*hoi peri*) of Achaicus and Alexander with holding the view that the title is spurious and was introduced into the text by a copyist from a commentary (*hupemnēmatismenon*):

T22 Simplicius, *On Aristotle’s Categories*, 208.4-7

οὐ δοκεῖ δὲ τοῦ Ἀριστοτέλους ἡ ἐπιγραφὴ εἶναι, οὐδὲ γὰρ ἐπὶ τῶν ἄλλων ἐποίησεν τοῦτο, ἀλλὰ γραφέως ἀμάρτημα ὑπολαμβάνουσιν οἱ περὶ τὸν Ἀχαϊκὸν καὶ τὸν Ἀλέξανδρον· ὑπεμνηματισμένον γὰρ αὐτὸ εὐρόντα τινὰ ὥς μέρος κατατάξαι.

The title does not seem to be by Aristotle for he did not do something like this in the other [categories], but the companions [*hoi peri*] of Achaicus and Alexander hold that [the title] is the mistake of a copyist because someone, they hold, inserted it as a part [of the treatise] finding it in a commentary [*hupemnēmatismenon gar auto heuronta*].

In other words, according to Simplicius, the companions of Alexander held the view that the title *as a whole* is spurious, but this is presented in al-Wahbī as Alexander’s view that the addition of *al-kayf* (*poion*) to *al-kayfiyya* (*poiotēs*) in the title is spurious.

The conveyor of the Porphyry citation in T21 (or al-Wahbī) is more accurate in reporting Porphyry’s view in T21 in response to the second question, i.e., why we have *al-kayf* in addition to *al-kayfiyya* in the title. In T21, Porphyry is credited with holding the view that *kayf* (*poion*) is a strictly more general term than *kayfiyya* (*poiotēs*) in that *kayf* can be used to mean *kayfiyya* and

it can also be used to mean the subject of some *kayfiyya*. Porphyry makes this very point in his short commentary on the *Categories*:

T23 Porphyry, *Short Commentary on the Categories*, 127.22-30

Ἐ. Διὰ τί οὖν ἐπέγραψεν Περὶ ποιοῦ καὶ ποιότητος;

Α. Τινὲς μὲν οὐ φασιν αὐτοῦ εἶναι τὸ ἐπίγραμμα· μηδὲ γὰρ ἐν ταῖς ἄλλαις κατηγορίαις προσγράψαι, ἀλλ' ἄνευ ἐπιγράμματος τεχνολογῆσαι περὶ ἐκάστης. τινὲς δὲ εἰς ἔνδειξιν τῆς χρήσεως τῶν ὀνομάτων· διὰ γὰρ τὸ τὴν ποιότητα λέγεσθαι καὶ ποιόν, διὰ τοῦτο ἐπιγράψαι σημαίνοντα ὅτι ἀδιάφορόν ἐστι ποιότητα λέγειν τὴν κατηγορίαν ἢ ποιόν· εἰ γὰρ τὸ μάλιστα ποιόν οὐ τὴν ποιότητα μόνον σημαίνει ἀλλὰ καὶ τὸ ἔχον αὐτήν, ἀναγκαῖον ἦν εἰδέναι, ὅτι κατὰ τι σημαίνόμενον ταῦτα δηλοῦται ἐκ τοῦ τῆς ποιότητος ὀνόματος καὶ τοῦ ποιοῦ.

Q: Then, why did he entitle [this chapter] “On *poion* and *poiotēs*?”

A: Some people deny that this title is by him for, they say, he did not add [a title] to the other categories, but he [went directly to] present his discussion [*technologēsai*] of each category without a title. Some other people [claim that this title is] for indicating [*endeixin*] the use of the terms; that is, because a quality [*poiotēta*] is also called a *poion*, they say that he put this title meaning that it does not make a difference to call [this] category quality [*poiotēs*] or *poion*. For if what is *poion* in the most extensive sense [*malista*] does not only mean a quality [*poiotēs*] but also something which has it [sc. *poiotēs*], it was necessary to know that it is denoted [*dēloutai*], according to some meaninging [*kata ti sēmainomenon*], using the terms “*poiotēs*” and “*poion*.”

In this passage, Porphyry first says that some people thought that this title was spurious, without naming who thought so. After this, he explains that others thought that this title is “for indicating [*endeixin*] the use of the terms,” i.e., *poion* and *poiotēs*, i.e., “that it does not make a difference to call [this] category *poiotēs* or *poion*,” Porphyry goes on to explain the two meanings of *poion*: as *poiotēs* and as the subject of *poiotēs*. We also find this point in the Porphyry citation in al-Wahbī reproduced as part of T21.

It is implied at the end of the Porphyry citation in al-Wahbī in T21 that even though *kayf* (*poion*) can mean a quality (*kayfiyya*) or the subject with a quality, in the title, *kayf* is used to mean about the subject “nothing but that whose condition [*hay’a*] is abstracted and taken simply [*illā mujarrad al-hay’a ‘alā basāṭatihā*].” This point is not explicitly made by Porphyry in T23; it is possible that the conveyor of the Porphyry citation in T21 was using Porphyry’s long commentary and took this remark from the long commentary, or this was the conveyor’s own remark starting from Porphyry’s claim in T23 that *poion* in the purported title of this chapter in the *Categories* does not mean the subject of a *poiotes* but simply *poiotes*, i.e., the *kayf* (*poion*) in the title does not mean the subject of a *kayfiyya* but it means the *kayfiyya*, i.e., this *hay’a* on its own, considered as separate.

Simplicius has a longer discussion of the relation between *poion* and *poiotes* in the passages surrounding T22 but Simplicius does not attribute these views explicitly to Porphyry. So, the source of the Porphyry citation in T21 is not Simplicius; it is Porphyry’s short commentary or his long commentary on the *Categories*.

After the discussion of the purported title of the chapter on qualities in the *Categories*, al-Wahbī moves on to discuss the first clause of this chapter, which is reproduced as T20 above. The main chunk of his discussion of this clause consists of a citation from al-Fārābī (p.195 lines 6-9) and a citation from Simplicius. Here is the passage attributed to Simplicius:

T24 Al-Wahbī, *On the Categories*, p.195 lines 10-3, Türker 122⁷¹⁰

وقال سنبلقيوس: هي ما تُحدِّث رسماً في الجوهر. ولأن الكيف أظهر من الكيفية عندنا منه⁷¹¹ فقال: هي المعنى الذي إذا سئل عن شيء موجود بالفعل كيف هو، كان الجواب به عن هذا السؤال صحيحاً.

⁷¹⁰ Türker considers only up to ... فقال هي to be attributed to Simplicius but what would then be the subject of this قال? It is unlikely to be Aristotle because al-Wahbī usually observes the practice of using قال with Aristotle when he is quoting him while when he is paraphrasing or explaining what Aristotle means, he usually introduces it with أراد. If the subject of this قال is not Aristotle, the obvious candidate is Simplicius.

⁷¹¹ Instead of my عندها منه, the ms. appears to read عن نهاية (عَنْ نَهَايَةِ 131v line 21), but this does not make good sense in this context. Mongy proposes a much more intrusive emendation; he proposes to insert, in the place of this short phrase in the ms., “في العبارة عن الهيئة، قدَّم رسمها أولاً”، but I cannot see a strong justification for such an intrusive emendation. It is clear from the corresponding discussion in Simplicius commentary that *al-kayf* = *poion* is more immediate and more familiar to us (*prosechesteron kai gnōrimōteron hēmin*) than *al-kayfiyya* = *poiotes*. I propose to emend this phrase as عندها منه and I take this to mean “according to us concerning it,” i.e., concerning substance. I think my proposal is to be preferred to the editor’s because my proposal is less intrusive and makes decent sense; as shown below, it also better reflects the idea in the underlying Greek text.

Simplicius said: they [sc. these words] relate [*tuḥaddithu*] a description about substance. And because *al-kayf* is clearer to us concerning it [sc., substance] than *al-kayfiyya*, he said that [quality] is the feature which is correctly [*ṣaḥīḥan*] cited in response to the question of how [*kayfa*] something which exists in actuality [*mawjūd bi-l-fiʿl*] is.

Both the al-Fārābī passage and the Simplicius passage seem to deal with two issues. The first one arises especially from the Arabic translation. Ishāq translates “*tines*” (meaning some people) at 8b25 (quoted in T20) as *ashkhās* (individuals). It is clear that in Ishāq’s translation *ashkhās* is not meant to refer to individual *people* but to individuals in general because in the following phrase *kayfa hiya* the pronoun *hiya* has *ashkhās* as its antecedent (we would expect *kayfa hum* if *ashkhās* was meant to refer to individual men). This raises the question of what sort of individuals we are talking about, substantial individuals or accidental individuals. Both al-Fārābī and Simplicius are credited with saying that Aristotle talks about substances, i.e., the primary substances here. This is not a point Simplicius makes in his commentary explicitly, but from his discussion of this clause from the *Categories*, it is clear that the subjects of the qualities Aristotle talks about in this clause are substances. So a reader of Simplicius with a view to answering this question that arises from the Arabic translation can find an answer to this question from Simplicius’ comments. The second issue both the al-Fārābī and the Simplicius passages address is that Aristotle uses “*poion*” in the definition of “*poiotēs*” but he should not because *poiotēs* is prior to *poion* (because something is said to be *poion* because of the presence of a *poiotēs* in it) and a posterior thing should not be used in the definition of the prior thing. Porphyry also addresses this issue in his short commentary. The solution to this issue we clearly see in the relevant parts of Porphyry’s (127.31-8.15) and Simplicius’ commentaries is that Aristotle provides a description (*hupographē* = *rasm*) (or something along these lines short of a definition in the strict sense) of quality in terms of qualified things (*poia*) because qualified things are *more familiar* or *better known* to us than the quality by virtue of which they are qualified:

T25 Simplicius, *On Aristotle’s Categories*, 211.5-28

Ἀλλ’ ἐπὶ τὴν λέξιν ἰτέον· ποιότητα δὲ λέγω καθ’ ἣν ποιοί τινες λέγονται· τῇ μεθέξει τῆς ποιότητος ποιὸν γίνεται τὸ μετέχον, ὥσπερ τῇ μεθέξει τῆς λευκότητος λευκόν. ‘ἀλλ’ ἄτοπον, φασίν, ἀπὸ τοῦ ὑστέρου τὸ πρότερον διδάσκειν καὶ ἀπὸ τοῦ ὁμοίως ἄγνωσμένου, καὶ τὸ αὐτὸ δι’ ἑαυτοῦ ἀποδιδόναι· εἰ γὰρ ποιότης μὲν ἐστὶν ἣν ἔχει ὁ

ποιός, ποιός δὲ ὁ ἔχων τὴν ποιότητα, αὐτὴ δι' αὐτῆς ἀπεδόθη'. πρὸς οὓς ῥητέον ὅτι οὐχ οἷόν τε τῶν πρωτίστων γενῶν ἐκ προτέρων ποιεῖσθαι τὴν διδασκαλίαν οὐδὲ δυνατόν κατὰ τὴν ἐν τῇ φύσει τάξιν ἀπὸ τῶν πρεσβυτέρων καὶ αἰτιωτέρων ποιεῖσθαι τὴν περὶ αὐτῶν παράδοσιν (οὐδὲν γάρ ἐστιν αὐτῶν πρότερον), ἀλλ' ἀπὸ τῶν ἡμῖν προσεχέστερων καὶ γνωριμωτέρων ἀνάγκη ποιεῖσθαι τὴν ὑπόμνησιν. γνωριμώτερον δὲ καὶ προσεχέστερον ἡμῖν τῆς ποιότητος τὸ ποιόν, εἴπερ τὴν μὲν ποιότητα καὶ ἀναιροῦσί τινες ὥς μηδὲ ὑφεστῶσαν ὅλως, τὸ δὲ ποιὸν οὐδεὶς ἀναιρεῖ...

ἔτι δέ, εἴτε ἐνέργεια τῆς ποιότητός ἐστιν τὸ ποιόν εἴτε μετοχή, φανερώτερόν ἐστιν τὸ κατ' ἐνέργειαν ὑφιστάμενον τοῦ κατὰ τὴν ἀφανῆ αἰτίαν προηγουμένου καὶ τὸ μετέχον τοῦ μετεχομένου· διὸ τὸ λευκὸν τῆς λευκότητος καὶ ὁ γραμματικὸς τῆς γραμματικῆς ἐστὶ σαφέστερα· κἀν γὰρ κατὰ τὴν ποιότητα τὸ ποιὸν λέγεται, ἀλλ' ἐν τῷ ποιῷ ἡ ποιότης ἐκφανεστέρα γίνεται.

But we should proceed to [the discussion of] his expression [*epi lexin*]: “I call a quality [*poiotēta*] that by which some people are said to be [people] of a sort [*poioi*].” By participating in a quality what participates in it comes to be qualified [*poion*] just as by participating in whiteness [what participates in it comes to be] white. “But it is absurd,” [some people] say, “to instruct about what is prior from what is posterior and from what is similarly unknown, and to explain [*apodidonai*] the same thing through itself. This is because if a quality is that the person who is qualified [*ho poios*] has, and the person who has the quality is qualified [*poios*], we would have explained quality [*autē*] through itself.” In response to these people, we must say that it is not possible to instruct about the primary genera [sc., the categories themselves as the highest genera] from what is prior to them nor is it possible to produce an exposition [*poieisthai tēn... paradosin*] of them from things which have more importance and causal power [*apo tōn presbuterōn kai aitiōterōn*] according to natural order (for nothing is prior to them), but we must remind [*poieisthai tēn hupomnēsēsin*] them from the things which are more immediate and better known to us [*tōn hemin prosechēsterōn kai gnōrimōterōn*]. The qualified is better known and more immediate to us than the quality, since some people deny the quality as completely lacking subsistence [*mēde huphestōsan holōs*], while no one denies the qualified...

Moreover, whether what is qualified is an actuality of the quality or a participation in it [metochē], what subsists in actuality is clearer than what precedes as an obscure cause [tou kata tēn aphanē aitian proēgoumenou] and what participates [in something is clearer] than that in which it participates. This is why the white is more evident than whiteness and the grammarian more than grammar; for even though what is qualified is said [to be qualified] by virtue of the quality, still the quality comes to be more manifest [ekphanestera] in the qualified.

The apodosis of the second sentence in the Simplicius passage in al-Wahbī in T24, i.e., “he said that [quality] is the feature which is correctly [ṣahīḥan] cited in response to the question of how [kayfa] something which exists in actuality [mawjūd bi-l-fi ‘l] is,” is not a literal translation of anything in Simplicius’ commentary in T25. That said, this apodosis in T24 is a paraphrase of the underlying *Categories* passage (T20), but in this apodosis “something which exists in actuality [shay’ mawjūd bi-l-fi ‘l]” is substituted to clarify “ashkhāṣ” in the Arabic translation of the passage in T20; so it is possible that the language of *energeia* in the second paragraph in T25 and claims like “what is qualified [to poion] is said on account of the quality [kata tēn poiotēta]” might have triggered this apodosis in the Simplicius passage in al-Wahbī in T24.

Conclusion:

In this conclusion, I will first summarize and put together what we gathered about the Arabic versions of Porphyry’s and Simplicius’ commentaries on the *Categories* from the account on the *Categories* in the *Fihrist*, and from the citations in al-Wahbī. Then I will briefly comment on what we can say in addition about the availability of the Arabic translations of these commentaries to al-Fārābī. As noted towards the beginning of this appendix, in his account on the *Categories*, Ibn al-Nadīm first lists the names of a number of Greek commentators in T1 (1) and then he provides concrete information about some commentaries. Porphyry is mentioned in the list but as I said above, without further evidence, we should not take this list as a sufficient ground to assert that all the commentators who are listed here had their commentaries available in Arabic translation. This list could be compiled by one of Ibn al-Nadīm’s sources of philosophical information based on whatever information they could gather from their sources on the Greek commentators on the *Categories* (e.g., marginal comments in their ms., collecting the

names mentioned in a commentary like Simplicius which cites several other commentators etc.). As Yaḥyā seems to be Ibn al-Nadīm's main source of information on the philosophical works, he would be the prime suspect for compiling and passing on such a list to Ibn al-Nadīm. Simplicius is also mentioned in the initial list but then Ibn al-Nadīm provides further information about his commentary in T1 (2): it seems to be indicated here that Simplicius' commentary contained passages that are attributed to other commentators. As I pointed out above, this concrete piece of information counts towards the availability of Simplicius' commentary to Ibn al-Nadīm or to his sources of philosophical information so that they could comment on a feature of the content of Simplicius' commentary but it is also possible that they gathered this piece of information from a secondary source (perhaps in a marginal comment in some ms.).

As it became clear above from my discussion of the passages attributed to Simplicius and Porphyry in al-Wahbī, Simplicius' commentary on the *Categories* is the source of the passages attributed to Simplicius in al-Wahbī, and almost every passage attributed to Porphyry in al-Wahbī must have a source other than Simplicius' commentary on the *Categories*. It is mentioned in the *Fihrist* account on the *Categories* in T1 (3) that there is a fragment (*qit'a*) attributed to Iamblichus but Yaḥyā questions this attribution because he reports that he saw the mention of "Alexander says" in it. I suggested above that this fragment could be from Iamblichus' commentary and Iamblichus might be citing Alexander in that part of his commentary. Or this fragment could be from Simplicius' commentary containing a citation of Iamblichus at the beginning and then a citation of Alexander. As I mentioned at the beginning of Section 2.b above, at the beginning of his commentary, Simplicius remarks that Porphyry's long commentary on the *Categories* was the substrate of Iamblichus' commentary. So it is possible that Iamblichus' commentary on the *Categories* also contained explicit citations of Porphyry. Even if this is the case, the citations of Porphyry in al-Wahbī are on widely different places in the *Categories*; so assuming that a *qit'a* would be of limited length, this fragment potentially from Iamblichus' commentary cannot be the source of all the Porphyry citations in al-Wahbī. As I explained above, the passages attributed to Porphyry in al-Wahbī are paraphrases of passages in Porphyry's short commentary with some small additions. I suggested that these additions might be remarks due to the conveyor of the underlying Porphyry passages into Arabic or due to al-Wahbī himself; alternatively, these additions might derive from Porphyry's long commentary. So given our evidence from the *Fihrist* and al-Wahbī, it seems that some or all of Simplicius' commentary was

available in Arabic at some time (as a translation or as a paraphrase), and that some or all of Porphyry short or long commentary on the *Categories* was available in Arabic at some time (as a translation or as a paraphrase).

Next, I want to comment briefly on the dating of the Arabic version of Simplicius' and Porphyry's commentaries and their availability to al-Fārābī. As I mentioned above, a reasonable conjecture about the date of composition of al-Wahbī's commentary is the first half of the eleventh century, or even the last few decades of the tenth century. This means that the Arabic versions of Porphyry's and Simplicius' commentaries were available in the tenth century. So unless these were translated into Arabic (or rendered as paraphrases in Arabic) by Yaḥyā after al-Fārābī's death (950-1) or by Yaḥyā's students, it is chronologically possible that al-Fārābī had access to them.

We know from Ibn al-Nadīm's account on the *Categories*, T1 (2) that Ibn al-Nadīm or his sources of philosophical information (primarily Yaḥyā and his students) were familiar with the content of Simplicius' commentary as it is stated that Simplicius' commentary cites many other commentators. As I indicated above, this by itself should not be taken as an absolute evidence for the existence of an Arabic translation or paraphrase of Simplicius commentary that could be inspected by Ibn al-Nadīm or his sources of philosophical information because this piece of information might also originate from a comment or a marginal comment in a Greek or Syriac text of or on the *Categories*. Nonetheless, when this piece of information from the *Fihrist* is combined with the evidence of the availability in Arabic of at least a part of Simplicius' commentary that we gather from al-Wahbī, it seems safer to assume that Simplicius' commentary was made available in Arabic at the latest a few decades after al-Fārābī's death. Moreover, if the fragment attributed to Iamblichus mentioned in T1 (3) is from Simplicius' commentary, and if it is detached from a more complete translation of Simplicius' commentary, Simplicius' commentary must have been rendered in Arabic enough time before Yaḥyā's death so that a fragment could be detached from it, circulated under Iamblichus' name, and that this fragment could be inspected by Yaḥyā as a fragment attributed to Iamblichus, as reported in T1 (3).

Moreover, in his accounts on philosophical works, Ibn al-Nadīm often states explicitly the translators of such works if the translators are Yaḥyā or one of his students; since no information on the translator of Simplicius' commentary on the *Categories* is provided, this can be taken as

an indication of the fact that Simplicius' commentary was not translated by Yaḥyā or his students. This would mean that Simplicius' commentary was translated (or made available in Arabic as a paraphrase) in al-Fārābī's life time or earlier. If this is the case, it is chronologically possible for al-Fārābī to have access to the Arabic version of Simplicius' commentary.

The *Fihrist* account on the *Categories* does not supply any concrete information on Porphyry's commentary. This should not necessarily be taken as a strong indication of the fact that Porphyry's commentary was not available to Ibn al-Nadīm or to his sources of philosophical information. And even if Porphyry's commentary was not available to Ibn al-Nadīm or his sources of philosophical information, this does not necessarily mean that it was not available to al-Fārābī either. We should bear in mind the precarious state of the availability of the Arabic versions of the Greek philosophical works as well exemplified by Yaḥyā's report of his futile effort to get hold of some commentaries by Alexander of Aphrodisias.⁷¹²

We know that al-Fārābī had a long commentary on the *Categories*. The citations of al-Fārābī in al-Wahbī are apparently from al-Fārābī's long commentary. Moreover, Mauro Zonta discovered fragments from al-Fārābī's long commentary on the *Categories* in a medieval Hebrew supercommentary on Averroes' *Middle Commentary* on the *Categories* by Yehudah Cohen; Zonta published these Hebrew fragments with their English translations in an article.⁷¹³ I went through Zonta's English translation of these fragments preserved in Hebrew. Al-Fārābī's remarks clearly draw on the Greek commentaries but as far as I could spot, in the passages translated by Zonta, a Greek commentator is named only once, and that is Alexander.⁷¹⁴ A closer analysis of

⁷¹² Reported in the *Fihrist*, Flügel 252.27-3.4 = Sayyid v.2 174.5-11.

⁷¹³ Mauro Zonta, "Al-Fārābī's Long Commentary on Aristotle's *Categoriae* in Hebrew and Arabic: A Critical Edition and English Translation of the Newly-Found Extant Fragments," in *Studies in Arabic and Islamic Culture II* (Ramat Gan: Bar-Ilan University, 2006), 185–254. In this article, Zonta also prints a re-edition of the passages attributed to al-Fārābī in al-Wahbī based on Türker's edition and he produces an English translation of these passages too.

⁷¹⁴ Zonta, *Al-Fārābī's Long Commentary*, 223-4. Zonta suggests in n.196 that al-Fārābī's source here is probably be the version of Alexander's *On the Differentiae* (*Fī al-Fuṣūl*) edited by Badawī with Abū Bishr's comments on it (Alexander of Aphrodisias, "Maqālat al-Iskandar fī al-Fuṣūl wa-fī Ḥawāshihā Ta'ālīq li-Abī 'Amr al-Ṭabarī 'an Abī Bishr Mattā bin Yūnus," in Abdel Rahman Badawī, ed., *Aristū 'inda al-'Arab: Dirāsa wa-Nuṣūṣ Ghayr Manshūra* (Kuwait: Wakālat al-Maṭbū'āt, 1978), 295–308); I think that this is a likely candidate but we should not leave out the possibility that al-Fārābī was drawing on Alexander's commentary on the *Categories* itself. The view attributed to Alexander here in the Hebrew fragments edited and translated by Zonta is also attributed to Alexander on the same issue in al-Wahbī: see p.63 line 6 - p.64 line 2 (= Türker 105). Al-Fārābī's response to Alexander in the Hebrew fragments on this issue is similar to the response attributed to al-Fārābī in al-Wahbī: p.65 lines 3-6 (= Türker 105) (as also indicated by Zonta on p.224 n.198).

the details of these fragments from al-Fārābī's long commentary might reveal the distinctive influences of some particular Greek commentators but even if this is the case, we should not necessarily assume that al-Fārābī had direct access to those Greek commentaries; al-Wahbī cites Quwayrī and Abū Bishr; it is possible that al-Fārābī had access to some views expressed by the Greek commentators *only* through Quwayrī's or Abū Bishr's (or other Arabic commentators') commentaries.

In any case, the fragments published by Zonta must represent only a short part of al-Fārābī's long commentary. Even if al-Fārābī does not mention Simplicius or Porphyry at all in his whole commentary, we should not take this as a decisive evidence for the view that al-Fārābī did not have access to their commentaries; after all, there is an established tendency in the art of commentary to honor previous commentarial effort not always by acknowledging it explicitly but sometimes by affirming it anonymously. Moreover, the immediate purpose of this appendix is to show that al-Fārābī could have access to the long passage from Porphyry's *Ad Gedalium* quoted in Simplicius' commentary that I discussed in detail in Section 2.b. So, if we assume that, e.g., Abū Bishr anonymously paraphrased this passage in his commentary and al-Fārābī read it in Abū Bishr without knowing that Abū Bishr took it from Porphyry's long commentary directly or through Simplicius' commentary, my point that al-Fārābī had access to the ideas expressed in that long fragment from Porphyry's *Ad Gedalium* would still stand.

Appendix: Γ.2 version of the being-unity equivalence argument with Uṣṭāth's Arabic translation

As mentioned in Section 3.b, a part of the Greek text of the Γ.2 version of the being-unity equivalence argument is corrupt, namely T1 (2). I reproduce below the readings of the two main independent representatives of each of the two hyparchetypes of the Greek text of the *Metaphysics*, namely, mss. E (Paris, 10th century) and J (Vienna, 9th century) for the alpha tradition, and A^b (Florence, 12th-14th centuries) and M (Milan, 14th century) for the beta tradition. I owe the readings of these mss. to a handout by Stephen Menn which he kindly shared with me.

We will see that E and J disagree only on a single word and almost certainly the reading in E is incorrect. So the reading of the alpha tradition seems to be accurately represented by J on this

word. The reading of J here is also adopted in the edition by Hecquet-Devienne of *Met.* Γ⁷¹⁵ (except that in this edition we have ἐστὶν at 1003b7 instead of the ἔστιν found in J; more on this, see below). I will also suggest what seems to be the reading of the beta tradition (based on the readings we find in M and A^b). As I argued in Section 3.b, generally speaking, according to both readings the whole being-unity equivalence argument more or less makes the same point. Confirming this in detail, I will spell out two interpretations supported by the reading of the alpha tradition, and I will also spell out what the reading of the beta tradition means. We will see that all these interpretations agree with the basic point Aristotle makes also in T1 (3)-(4) that X and X *that is* (ōn/ousa/on X) are the same in a relevantly strong way, and X and *one* X (heis/mia/hen X) are the same in a relevantly strong way.

The main Arabic translation of *Met.* Γ is the translation by Uṣṭāth which is fully quoted in the Textus of Averroes' *Long Commentary on the Metaphysics*. My second purpose here is to propose a reconstruction of the original of Uṣṭāth's translation of T1 (2)-(3). Uṣṭāth translated the *Metaphysics* in the first half of the ninth century and Averroes wrote his *Long Commentary* in the second half of the twelfth century. So there are more than three centuries between the completion of Uṣṭāth's translation of the *Metaphysics* and Averroes' use of it in his *Long Commentary*. In his edition of Averroes' *Long Commentary*, Bouyges aims to reconstruct the original of Averroes' commentary, including the text of Uṣṭāth's translation that Averroes reproduced in his commentary, but given the difference in time between Averroes' *Long Commentary* and the completion of Uṣṭāth's original translation, it would not be surprising if the copy of Uṣṭāth's translation Averroes reproduced in his commentary contained corruptions. Since al-Fārābī was active in the first half of the tenth century and is much closer to Uṣṭāth's completion of his translation of the *Metaphysics*, the copy of Uṣṭāth's translation of the *Metaphysics* that al-Fārābī used might have been free of some or all of those corruptions found in the copy of this translation that Averroes reproduces. I follow in Bouyges' footsteps in making conjectures about the original of Uṣṭāth's translation as Bouyges occasionally makes such conjectures in his apparatus, using the siglum [X] to represent Uṣṭāth's original translation. Along the way, it will become clear that whichever version of T1 (2)-(3) in Uṣṭāth's translation was available to al-

⁷¹⁵ In Aristotle, *Métaphysique Gamma: Édition, Traduction, Études: Introduction, Texte Grec, et Traduction par M. Hecquet-Devienne: Onze Études Réunies par A. Stevens*, ed. Myriam Hecquet-Devienne and Annick Stevens, trans. Myriam Hecquet-Devienne (Louvain-la-Neuve: Peeters, 2008).

Fārābī, it conveyed an idea that basically agrees with the idea we get from T1 (4), namely that X and X *that is* are the same in a relevantly strong way, and X and one X are the same in a relevantly strong way so that being or one added to X is not different from X in the relevant way.

The mss. readings of the Greek text of T1 (2) (1003b26-9) are reproduced below: first, the two mss. in the beta tradition (the difference between the two is underlined):

M: ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστὶν ἄνθρωπος καὶ ἔστιν ἄνθρωπος

A^b: ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστὶν ἄνθρωπος καὶ ἔστιν ἄνθρωπος

Since we expect Aristotle to say something also about being here and since we have ὢν ἄνθρωπος καὶ ἄνθρωπος in the mss. of the alpha tradition (see below), it seems more likely that ὢν ἄνθρωπος καὶ ἄνθρωπος was omitted due to near repetition in M. So, the beta reading should be the same as the reading of A^b:

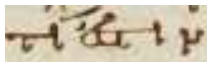
β: ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστὶν ἄνθρωπος καὶ ἔστιν ἄνθρωπος

The readings of the two mss. in the alpha tradition are as follows (the difference between them is underlined):

J: ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ ἔστιν ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος

E: ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τί ἐστὶν [OR τι ἔστιν⁷¹⁶] ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος

We expect Aristotle to give an example of an expression or expressions after the mention of κατὰ τὴν λέξιν ἐπαναδιπλούμενον and we have a τό used as a quotation mark in the corresponding

⁷¹⁶ The ms. (MS. Paris Gr. 1853) has (241v line 25) . The acute accent either goes with τι or with ἐστὶν. Hecquet-Devienne reports τι ἔστιν in her apparatus.

place in the reading of the beta tradition. So it is likely that J gives the correct reading of the alpha tradition:⁷¹⁷

α: [1] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [2] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ ἔστιν [OR τό ἐστίν⁷¹⁸] ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος

For my following discussion on the reading of the alpha tradition, I numbered the two clauses of this sentence. The first clause of this sentence can be translated straightforwardly as “for *one* human, human *that is* [*ōn anthrōpos*], and human are the same.” The second clause supports basically two different interpretations turning on the question of whether we should read the underlined *estin* as one-place (existential) or two-place (predicative) *estin*. If it is the former, it would be used as “X *estin*” and this would mean that X *is* in the sense that it exists or that there is an X. If it is the latter, it would be used as “X *esti* Y” and this would mean that X is Y. According to the former reading, the example in the second clause would be three expressions: “human *is*,” “human,” and “*one* human.” According to the latter reading, the example in the second clause would be one expression: “the human is both human and one human.”⁷¹⁹

Now, in this clause, the subject of δηλοῖ and ἐπαναδιπλούμενον must be the same. Even though we have neuter singular participle, this common subject can be multiple things as in the first clause, i.e., ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος. According to reading of the second clause that takes *estin* to be existential, the whole clause can be translated as

T1 (2) α-1: “[2] and it does not denote another thing when it is repeated in speech [*kata tēn lexin epanadiploumenon*], [as in the expressions] ‘human *is*,’ ‘human,’ and ‘*one* human’.”

⁷¹⁷ See p.109 n.3 for Hecquet-Devienne’s suggestion that the τ in the underlined phrase in ms. E might be a mistake by a copyist for an abbreviation used for γάρ which is shaped like “an uncial (or uppercase) gamma whose horizontal line is crossed by a small vertical line,” closely resembling τ. However, Hecquet-Devienne also points out that τό is represented in both traditions and for this reason she also adopts the reading of J.

⁷¹⁸ Hecquet-Devienne accentuates these two words as τὸ ἐστίν. Since the word preceding *estin*, i.e., *to*, has an acute/grave accent on its ultima (i.e., on the only syllable it has), and the word following *estin* is not an enclitic, I think that the rules of accentuation require this *estin* to remain an enclitic, but even if I am wrong, the accentuation is not the philosophical issue here. The philosophical issue is whether we should take this *estin* to be used as an existential *estin* or a predicative *estin*. As indicated in the following footnote, Hecquet-Devienne takes it to be predicative *estin*.

⁷¹⁹ Hecquet-Devienne takes the *estin* here to be a predicative *estin* as she translates the whole clause as “c’est-à-dire qu’ils ne désignent pas autre chose quand est redoublé en fonction de l’expression ‘l’homme est un homme et un homme *un*’.”

According to the reading which takes *estin* to be predicative, the whole sentence can be translated as

T1 (2) α-2: “[2] and it does not denote another thing when it is repeated in speech, [as in the expression] ‘the human is both human and one human’.”

According to the first reading, Aristotle basically makes the same point as the first clause. For example, a human is a single thing, and we can refer to this same thing in speech again, though using different expressions like “human,” or “human *is*,” or “*one* human,” and when we refer to the human again, though this time with a different expression like “human *is*” or “*one* human,” we do not refer to something else but still to the same thing. So, according to this reading, the second clause would be paraphrasing the first clause with the additional point that in the case of “being” instead of the participle (*ōn*), we can also use the finite verb (*estin*).⁷²⁰

According to the second reading, we have a single expression and in this expression, we repeat the same word or phrase but as a result, we do not denote something different from what we denote when we use this word or phrase alone. So, when we say “the human is human” or “the human is one human” (or the conjunction “the human is both human and one human”), we repeat the word “human” in each of these expressions, but each of these expressions denote the same thing as “human.” Perhaps we should understand “the human *is* human,” with an emphasis on “*is* [*estin*]” and “the human is *one* human” with an emphasis on “one [*heis*]” so as to understand the second clause also making a point both about being and unity, as in the rest of the being-unity equivalence argument. According to the second reading of the second clause, Aristotle is not simply paraphrasing the first clause; in the first clause, Aristotle makes a point about a noun (say X) and the noun phrases combining X and the adjective for one and the adjectival use of the participle for being, whereas in the second clause, he makes a point about sentences where “is X” is ‘predicated’ of X and “one X” is predicated of X. Nonetheless, the basic idea in the second clause would also be the same as the basic idea in the first clause according to the second reading of the second clause. The idea in the first clause is that X is the same as X *that is* (*ōn/ousa/on* X) in a relevantly strong way and X is the same as *one* X (*heis/mia/hen* X) in a relevantly strong

⁷²⁰ Aristotle makes a somewhat similar point at *Met.* Δ.7 1017a27-30: he says that there is no difference between predicating the participle of a verb of a subject and using the finite verb with the same subject, e.g., between saying “a human is [a] walking [thing] [*anthrōpos badizōn estin*]” and “a human walks [*anthrōpos badizei*].”

way. Likewise, according to the second reading of the second clause, “is X” is the same as “X” in a strong way so that when “is X” is ‘predicated’ of X, we do not add anything to X in the relevant sense; likewise, “one X” is the same as “X” in a strong way so that when “one X” is predicated of X, we do not add anything to X in the relevant sense.

To discuss what the beta reading means, let me reproduce the Greek text here and mark the corresponding two clauses in a similar way:

β: [1] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [2] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστὶν ἄνθρωπος καὶ ἐστὶν ἄνθρωπος

As discussed in Section 3.b, the first clause in the beta reading makes basically the same point as the first clause in the alpha reading, which is also the point made in T1 (3) and (4), but perhaps this point is made a bit more explicitly in the first clause of the beta reading than in the first clause of the alpha reading: as it is put in the first clause of the beta reading, on the one hand, X and *ōn/ousa/on* X are the same; on the other hand, X and *heis/mia/hen* X are the same (hence, as inferred in T1 (4), *to on* and *to hen* are the same). The second clause of the beta reading also makes a similar point as the second clause of the alpha reading. In the beta reading, we have two expressions as our example: “human is one” and “human *is*.” Somewhat similar to the second interpretation of the second clause of the alpha reading spelled out above, this example in the second clause of the beta reading seems to illustrate that when we predicate “one” of X, we do not denote by this expression anything other than what we denote by “X” alone, and likewise, when we ‘predicate’ “*is [estin]*” of X, we do not denote anything else. So, X and “being” applied to X are the same in a relevantly strong way whether we have a noun phrase with the participle for being (i.e., *ōn/ousa/on*) attributed to X (clause 1) or we have a sentence with the finite verb for being (i.e., *esti*) and X as its subject (clause 2), and likewise, X and “one” applied to X are the same in a relevantly strong way whether we have a noun phrase with the adjective for one (i.e., *heis/mia/hen*) attributed X (clause 1) or we have a sentence in which this adjective is predicated of X (clause 2).

I set out to present two things in this appendix: first, the variant readings of the corrupt Greek text of T1 (2) and the interpretations of the readings of this passage; second, my proposal to reconstruct Uṣṭāth’s original translation of T1 (2)-(3). For this purpose, let me make two general observations about Uṣṭāth’s translation that I cannot fully justify here given the limitations of

space. First, Uṣṭāth's exemplar of the Greek text of the *Metaphysics* has a greater tendency to agree with the readings of the alpha tradition.⁷²¹ Second, more often than not, and at the expense of producing a clunky Arabic text, Uṣṭāth tends to render his Greek text faithfully. Even when he is not, we can often understand why his translation deviates from the Greek text we have. Uṣṭāth sometimes skips words or phrases that are in the Greek text that we have;⁷²² this might be cause his exemplar had lacunae or was not legible in those places, or this might also be because of some mechanical error on Uṣṭāth's part (or in the later transmission history). Sometimes, Uṣṭāth seems to read a Greek word incorrectly,⁷²³ or he reads the Greek text with incorrect diacritics (an example of which is discussed in Appendix: Iota 2 version of the being-unity equivalence argument). And when he encounters some opaque claims in Aristotle, he tries to make them more

⁷²¹ Just for illustration, let me mention Uṣṭāth's translation of some passages in *Met.* Γ where the alpha reading and the beta reading significantly diverge (based on Jaeger's apparatus): Γ.1 1003a31 ὄν· διὸ καὶ ἡμῖν τοῦ ὄντος ἦ is omitted in A^b but preserved in the Arabic translation (297.3-4); Γ.4 1006a18 αἰτίου is omitted in A^b but preserved in the Arabic translation (348.2); Γ.4 1006a26-8 ἔτι δὲ... οὕτως ἔχου is omitted in E, J and it is also omitted in the Arabic translation (354.9 jumps from what comes right before this passage to what comes right after it, omitting this passage); Γ.4 1007b33 ἡ τριήρης ἡ is omitted in E, J and it is also omitted in the Arabic translation (see 381.16-2.1); Γ.4 1008a23 instead of βοδίσειεν A^b has νοήσειε but the Arabic translation has المشي (388.15); Γ.5 1009a26 A^b adds τουτέστι ὄν καὶ μὴ ὄν after ἄμφω ὄν but the Arabic translation does not add it (see 404.7-8); Γ.5 109b12 instead of ὅλως A^b has ὁμοίως but the Arabic translation has بالجملة (413.2); Γ.7 1011b35-2a1 A^b has ἡ ἡ ἀντίφασις instead of εἷη ὅν τις in E, J, which is followed in the Arabic translation (449.13); finally, Uṣṭāth's Arabic translation of the difficult Γ.8 1012b16-8 is somewhat confused but it does not seem to follow the reading of A^b. This is not exhaustive of all the passages in Γ where the Arabic translation follows or seems to follow the reading of the alpha tradition when it diverges from the reading of the beta tradition; that said, there are also a few passages in the Arabic translation of Γ that are ambiguous or seem to agree with the reading of the beta tradition rather than the reading of the alpha tradition.

⁷²² For example, as noted in T1(1) in Section 3.b, Uṣṭāth skips ἀλλὰ καὶ πρὸ ἔργου μάλλον at *Met.* Γ.2 1003b25-6. Also, as noted in Footnote n.326 in Chapter 2 Section 1, Uṣṭāth skips τῇ ἐντελεχείᾳ at *Met.* Z.13 1038b6. Sometimes Uṣṭāth explicitly indicates the lacunae in his Greek exemplar with expressions like “*nāqīṣ fī/min al-yūnānī/al-rīmī*,” see 466.10, 556.3, 738.1, 3, 948.2, 962.1, 967.11, 1456 *marg.* 2-3 (three times). We observe the same situation also at 842.2, 10, 851.5; these last three passages are brought to my attention by Matteo Di Giovanni and Oliver Primavesi, “Who Wrote Alexander's Commentary on *Metaphysics* Λ? New Light on the Syro-Arabic Tradition,” in *Aristotle's Metaphysics Lambda – New Essays* (Berlin: De Gruyter, 2016), 11–66, p.40 n.106.

⁷²³ One of the most influential examples of this is Uṣṭāth's translation of καὶ ἀμφοτέρω περὶ τὸ λοιπὸν γένος τοῦ ὄντος at E.4 1028a1-2 as أجناس الناقص من أجناس الهوية, apparently reading λοιπὸν as λείπον, the present active neuter nominative/accusative participle of λείπω, taking it in the intransitive sense of “be wanting, missing” and as modifying γένος. Uṣṭāth interprets Aristotle's claim to be that being *qua* true and being *per accidens* fall in the deficient genus (الجنس الناقص) of being. This is not foreign to Aristotle's point in the surrounding passage but clearly Aristotle does not talk about a “deficient” genus, but rather he talks about the “remaining [λοιπὸν]” genus. This understanding of being *per accidens* and being *qua* true as the kinds of being that are deficient compared to being as divided into the categories makes its way into the Latin tradition through Uṣṭāth's translation and Averroes' commentary, and “deficient being” gets translated as *ens diminutum*. See Armand Maurer, “*Ens Diminutum*: A Note on Its Origin and Meaning,” *Medieval Studies* 12 (1950): 216–22 for the fuller story. This point and this paper were brought to my attention by Stephen Menn.

Uṣṭāth's misreading of λοιπὸν as λείπον might be due to the fact that his Greek ms. was in a bad condition around that passage because a few lines below at 738.1 we have ناقص من الرومي (“missing in the Greek”) indicating some sort of lacuna in Uṣṭāth's Greek exemplar covering τοῦ ὄντος... φανερόν δ' (and maybe also including the following ἐν οἷς) at 1028a3-4.

understandable in his translation by supplying what he thinks to be the implied subject in a sentence without an explicit subject, or stating what he thinks to be the antecedent of a pronoun, or in some other way like this.

In order to make the comparison easier, let me reproduce the Greek text of T1 (2)-(3), with both the alpha and the beta readings for (2) along with Uṣṭāth's translation of this passage as found in the Textus in Averroes' commentary (in Bouyges' edition):

T1 (2)-(3)

(2-α) [1] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [2] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ ἔστιν [OR τό ἐστιν] ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος

(2-β) [1] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος, [2] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἔστιν ἄνθρωπος καὶ ἔστιν ἄνθρωπος

(3) δῆλον δ' ὅτι οὐ χωρίζεται οὗτ' ἐπὶ γενέσεως οὗτ' ἐπὶ φθορᾷς, ὁμοίως δὲ καὶ ἐπὶ τοῦ ἐνός

[a] لأن قول القائل إنسان واحد أو إنسان هو أو إنسان هذا يدل على شيء واحد ولا يدل على أشياء مختلفة إذا كررها [b] فمعلوم بأن الكلمة التي تقول إنسان هو أو إنسان واحد لا تدل على أشياء مختلفة [c] إذ لا فرق بين قول القائل إنسان هو أو إنسان لا في الكون ولا في الفساد وكذلك القول في الواحد أيضا

I underlined the passages where there is a disagreement among the Greek texts, on the one hand. and the Greek texts and the Arabic translation, on the other. I will discuss the details of Uṣṭāth's translation but let me first explain generally how Uṣṭāth read the Greek text to produce this Arabic translation. Uṣṭāth reads (2.1) in the Greek text continuous with καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον in (2.2). Uṣṭāth expresses this in Arabic in (a) in his translation. As in the Greek original, he takes the following example in (2.2) to be an example illustrating in particular the earlier part of (2.2), namely οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον, but he reads the example in (2.2) continuously with (3) in the Greek text, taking the ὅτι at the beginning of (3) to mean “because.” In other words, Uṣṭāth understands this part of the Greek text as follows (I reproduce the example in the alpha reading as a place-holder for now; I discuss below whether Uṣṭāth read a Greek text agreeing with the alpha reading or with the beta reading):

(an example of the claim that οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον is) τὸ ἔστιν ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος, and (this is) δηλόν, ὅτι (because) οὐ χωρίζεται...

Changing the order of the elements of the sentence a bit to make it read more smoothly in Arabic translation, and repeating the claim οὐχ ἕτερόν τι δηλοῖ to state explicitly what the example in (2.2) illustrates, Uṣṭāth translates his Greek text, taking it in his mind as if it read something like this:

δηλόν δ' [ὅτι οὐχ ἕτερόν τι δηλοῖ] τὸ ἔστιν ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος, ὅτι [meaning because] οὐ χωρίζεται... [i.e., the rest of (3)],

and he translates this into Arabic as

[b] *fā-ma 'lūm bi-anna...*, [c] *idh lā farqa...*

Having clarified the general structure of how Uṣṭāth understood the Greek text and which parts of his translation correspond to which part of the Greek text, we can discuss the details of Uṣṭāth's translation to determine what his Greek exemplar probably read (agreeing with the reading of the alpha tradition or that of the beta tradition). First, a quick reminder: in his *Long Commentary on the Metaphysics* Averroes first divides the text into paragraphs of various length, each of which I call a Textus. Then Averroes divides each paragraph into smaller chunks and reproduces each of these smaller chunks before his commentary on it. I call each of these smaller chunks a Citatio. Almost always the Citatio and the Textus agree.⁷²⁴ In one place in the Arabic translation under consideration, the version in the Textus and that in the Citatio disagree. Moreover, the medieval Latin and Hebrew translations of Averroes' *Long Commentary* show a host of variant readings.⁷²⁵ So, I will first quickly review the reasons why I agree with Bouyges that the text he prints in the Textus in his edition was probably the text that Averroes copied from the version of Uṣṭāth's translation that was available to Averroes. After establishing the version of Uṣṭāth's translation that Averroes copied into his commentary as the Textus, I will make some

⁷²⁴ Sometimes Averroes uses a different Arabic translation in the Citatio but then he explicitly signals this, and this is not an issue in the passage under consideration.

⁷²⁵ I use the readings of two mss. of Hebrew translations as cited in Bouyges' apparatus. These mss. are MS. Paris hébr. 886 (Or. 112) (ms. a), and MS. Paris hébr. 887 (Or. 114) (ms. a). Bouyges indicates that these mss. are not dated but they seem to be from the 15th century. For the Latin translation, I use the forthcoming critical edition by Dag Hasse with Stefan Georges, "Averroes' Long Commentary on Aristotle's Metaphysics (Averroes Latinus)." I would like to thank Jens Schmitt for sharing with me the Latin translation of the passage under consideration from this critical edition whose preparation he contributed to.

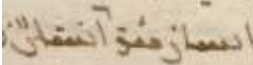
conjectures on how this passage might have read in Uṣṭāth's original translation, which might be closer to what al-Fārābī read than what we find in Averroes' *Long Commenary*. Along the way, it will also be clearer that whatever Uṣṭāth's original translation exactly had and whichever version of Uṣṭāth's translation al-Fārābī read, he would get an idea out of T1 (2)-(3) that is basically in agreement with the idea implied in T1 (4) which is accurately conveyed in the Arabic translation, namely that X and X *that is* are the same in a relevantly strong way and X and one X are the same in a relevantly strong way.

The underlined passage in (a) in the Arabic translation, i.e., إنسان واحد أو إنسان هو أو إنسان هذا is the same in the Citatio (312.7), and the Latin and the Hebrew translations also reflect the same Arabic text. In his commentary, Averroes paraphrases this passage as إنسان واحد وإنسان هو أي موجود (312.10-11). I will say below more about how this passage compares with the underlying Greek text, following the reading of the alpha tradition or that of the beta tradition. But it is clear that *insān huwa* must be translating *ōn anthrōpos* and Averroes correctly understands that Uṣṭāth uses *huwa* here in the sense of *mawjūd*. *Huwa* as the pronoun of separation can be used to translate *estin* when it is used in two-place contexts, i.e., predicatively, but it is unusual to use *huwa* in a one-place context to translate a 'being' term in Greek, as Uṣṭāth did here. That said, Uṣṭāth's choice of translating *ōn anthrōpos* as *insān huwa* makes more sense if we consider the fact that Uṣṭāth tends to translate *to on* and the related Greek philosophical terms for being with *huwiyya*,⁷²⁶ but here he could not translate *ōn anthrōpos* using *insān* and *huwiyya* as a noun phrase; it seems like a compromise to translate it as *insān huwa* which preserves the connection to Uṣṭāth's default term for *to on*, i.e., *huwiyya*.

The underlined passage in (b) in the Arabic translation, الكلمة التي تقول إنسان هو أو إنسان واحد, is written without the أو in the body of the ms. but it is indicated in the margin,⁷²⁷ and the Citatio in Averroes' commentary (312.13-4) and the readings in the Hebrew mss. also have أو. The Latin

⁷²⁶ That said, he tends to use *inniyya* to translate *einai* used in the sense of essence (e.g., in *to* ($X_{\text{dat/acc}}$) *einai* in the sense of the essence (of X) and in *to ti ēn einai*).

⁷²⁷ As can be seen at 34v line 18 of the Arabic ms. (MS. Leiden Or. 2074), أو is omitted in the body of the text, but

there is a mark in its place apparently pointing to the left margin: . In the left margin of the

same line, we have . I would like to thank the University Library of Leiden for making this ms. and many others freely available on their website.

translation has “sermo dicens homo iste aut homo unus,” reading إنسان هذا instead of إنسان هو (إنسان هذا in the underlined passage in (a) is also translated as “homo iste”). Since the *huwa* here gives the more difficult reading (because, as I pointed out above, the use of the pronoun of separation in a one-place context is unusual, if not outright ungrammatical), and since the Arabic text has *huwa* and the Hebrew mss. agree with it, I think that the Latin translation represents an incorrect reading. هذا and هوا can be mistaken for each other, and in particular, in the writing style of the ms. of Averroes’ *Long Commentary*, هذا and هوا look very similar; if the spaces between the words are not pronounced, هو أو can easily be mistaken for هذا و or even for هذا أو (if an additional *alif* is read into the text).⁷²⁸ So the Latin translator could mistake هو أو for هذا و or even for هذا أو especially if the writing style of the ms. of Averroes’ *Long Commentary* was widely used in the Muslim West, and the Arabic exemplar of the Latin translator was written in a similar style.

I think that the underlined passage in (c) in the Arabic translation as printed by Bouyges, i.e., بين قول القائل إنسان هو أو إنسان is correct but we have a bigger mess here. First of all, this underlined passage is not in the Greek original. Whatever Uṣṭāth originally wrote in the place of this underlined passage in (c), he thought that it was the unstated, implied subject of *χωρίζεται* in the Greek. So he translated οὐ χωρίζεται οὗτ’ ἐπὶ γενέσεως οὗτ’ ἐπὶ φθορᾶς, ὁμοίως δὲ καὶ ἐπὶ τοῦ ἐνός as لا فرق بين قول القائل إنسان هو أو إنسان لا في الكون ولا في الفساد وكذلك القول في الواحد أيضا and our purpose is to determine how Uṣṭāth understood the implied subject of *χωρίζεται* and how he expressed it in Arabic, but first, we should establish what Averroes copied into his commentary from the version of Uṣṭāth’s translation that he was using. In the body of Averroes’ commentary, the first إنسان in the underlined passage in (c) is omitted but then it is supplied in the margin.⁷²⁹ Moreover, right after his passage, we have a dittography; the copyist copies لا تدل على أشياء مختلفة from the previous line, but the beginning and the end of this passage are

⁷²⁸ For example, see هو at 35r line 6: ...إنسان هو أو إنسان... and compare it with هذا at the

next line: ...إنسان هذا أو إنسان...

⁷²⁹ As can be seen at 34v line 19 of the Arabic ms., the first إنسان is omitted in the body of the text, but there is a mark

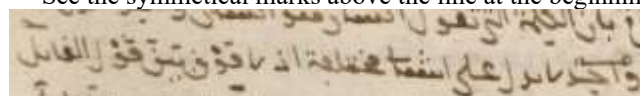
in its place apparently pointing to the right margin: القائل هو. In the right margin of the same line, we have

إنسان

clearly marked by the corrector (the same ink color, so could be the same person), apparently suggesting that it is to be deleted.⁷³⁰ In fact, this repeated passage is not in the Citatio, and it is not in the Latin and Hebrew translations either.

This passage in the Citatio in Averroes' commentary (312.14-5) reads *بين قول قائل إنسان هذا أو إنسان* having *هذا* instead of *هو*. As I pointed out above, the corruption of *هو* into *هذا* (and the other way around) is not unusual, especially in the writing style of the ms. of Averroes' commentary. *إنسان هذا* also does not read very smoothly and in his commentary Averroes paraphrases it as more familiar *هذا إنسان* but *إنسان هذا* is seemingly not as awkward as *إنسان هو*. Also, when Averroes was copying the Citatio, he was probably more directly thinking about his commentary than he was when he was copying the Textus. So the Citatio is more likely to be influenced by Averroes' thoughts on what the text means than the Textus. Averroes interprets (b) and (c) in the Arabic translation together as "just as it is clear that there is no difference between our expressions 'this human [*hādhā insān*]' or 'this human which is neither in [the process of] generation nor in [in the process of] corruption [*hādhā insān lā fī al-kawn wa-lā fī al-fasād*]', so it is in the case of our expressions 'this human' and 'this human who is one [*hādhā insān wāḥid*]'. I mean that just as the subject is not multiplied in our expressions 'this human' and 'this human which is neither in [the process of] generation nor in [in the process of] corruption' due to the fact that our expression 'neither in [the process of] generation nor in [in the process of] corruption' is two negations [*salbayn*] of the human, so it is in the case of our expressions 'this human' and 'this human who is one' because the noun 'the one' denotes nothing but a negation about [the thing which is said to be one], which is lack of division" (312.15-3.5). So Averroes takes *إنسان لا في الفساد* in (c) as a whole to be an expression, in addition to the preceding expression which is *إنسان هو* in the Textus and *إنسان هذا* in the Citatio. It is not possible that Uṣṭāth could mean the whole phrase *إنسان لا في الكون ولا في الفساد* to be taken as an expression given that he is translating οὐ χωρίζεται οὗτ' ἐπὶ γενέσεως οὗτ' ἐπὶ φθορᾷς and he supplies 'إنسان' أو 'إنسان هو' as in the Textus (or however we emend these two expressions) as the implied subject of *χωρίζεται*. However, as Averroes understands the passage, we have an expression X, and another expression

⁷³⁰ See the symmetrical marks above the line at the beginning and the end of the repeated passage (at 34v line 19):



XY where Y is a negated attribute of X, and since he understands the second compound expression to be *الفساد لا في الكون ولا في الإنسان*, it would make sense for him to want the first simple expression to be *إنسان*, or close enough, *هذا إنسان*. By contrast, *إنسان هو*, or *إنسان موجود* as in Averroes' paraphrase, would be another compound expression. So perhaps his inclination to interpret (c) in this way contributed him to read *إنسان هو أو إنسان* as *إنسان هذا أو إنسان*. The translation of the Citatio in the Hebrew mss. seem to exhibit interpretive intervention under the influence of Averroes' following interpretation. According to Bouyges' apparatus, the back translation of the reading of ms. a is *إنسان هذا وهذا إنسان* and the back translation of the reading of ms. d is *إنسان هو وهذا إنسان واحد*.

Finally, let me note the Hebrew and Latin translations of the version of this passage in the Textus. Both Hebrew mss. agree with the reading of the Arabic text, i.e., *إنسان هو أو إنسان* except that the back translation of ms. d has *واحد* in addition at the end. This *واحد* might be added at the end of the phrase in ms. d under the influence of the Citatio in this ms. (which also has *واحد* in addition at the end as quoted right above). The Latin translation, "homo iste et homo," translates *إنسان هذا و إنسان* but as I pointed out above, *هو أو* can be mistaken for *هذا و*. Moreover, the Latin translation does not repeat the Citatio after the Textus (it just repeats a few words from the beginning of the Citatio to orient the reader). So it is possible that the Latin translator wanted to make the readings in the Textus in his translation to agree with the readings in the Citatio when the readings in the Textus and those in the Citatio had some differences because Averroes comments directly on the Citatio, but the reader of the Latin translation would assume that Averroes comments on whatever is found in the Textus.

In short, I agree with Bouyges that the passage we have in the Textus printed by Bouyges was probably what Averroes copied into his *Long Commentary* as the Textus from the copy of Uṣṭāth's translation that he was using. With this being established, let me make a few speculative comments on what might have been in the original of Uṣṭāth's translation. For ease of discussion, let me reproduce again the Greek texts and the Arabic translation printed by Bouyges in the Textus.

(2-α) [1] *ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ὢν ἄνθρωπος καὶ ἄνθρωπος*, [2] *καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ ἔστιν [OR τό ἐστιν] ὁ ἄνθρωπος καὶ ἄνθρωπος καὶ εἷς ἄνθρωπος*

(2-β) [1] ταὐτὸ γὰρ εἷς ἄνθρωπος καὶ ἄνθρωπος, καὶ ὧν ἄνθρωπος καὶ ἄνθρωπος, [2] καὶ οὐχ ἕτερόν τι δηλοῖ κατὰ τὴν λέξιν ἐπαναδιπλούμενον τὸ εἷς ἐστὶν ἄνθρωπος καὶ ἐστὶν ἄνθρωπος

(3) δηλὸν δ' ὅτι οὐ χωρίζεται οὗτ' ἐπὶ γενέσεως οὗτ' ἐπὶ φθορᾷ, ὁμοίως δὲ καὶ ἐπὶ τοῦ ἐνός

[a] لأن قول القائل إنسان واحد أو إنسان هو أو إنسان هذا يدل على شيء واحد ولا يدل على أشياء مختلفة إذا كررها [b]
فمعلوم بأن الكلمة التي تقول إنسان هو أو إنسان واحد لا تدل على أشياء مختلفة [c] إذ لا فرق بين قول القائل إنسان هو أو
إنسان لا في الكون ولا في الفساد وكذلك القول في الواحد أيضا

If Uṣṭāth's Greek exemplar had the alpha reading, the underlined passage in (a) would also be so in Uṣṭāth's original translation, translating εἷς ἄνθρωπος as إنسان واحد, ὧν ἄνθρωπος as إنسان هو and ἄνθρωπος as إنسان هذا. However, if Uṣṭāth's Greek text had the alpha reading, the underlined passage in (b) would be an incomplete translation of this Greek passage. First of all, Uṣṭāth correctly recognizes that the τὸ in the underlying Greek passage functions as a quotation mark and Uṣṭāth expresses the fact that we are mentioning the following expression or expressions by introducing them with الكلمة التي تقول. If Uṣṭāth took the *estin* in 2-α (2) existentially, he would have used *huwa* this time for the one-place use of *estin*, again unusual, but not more unusual than using *huwa* to translate *ōn* used in a one-place context. However, we would need another إنسان in the middle to translate the ἄνθρωπος in the middle. In other words, if Uṣṭāth's Greek exemplar had exactly the alpha reading and he took the *estin* in it existentially, his original translation likely had إنسان هو أو إنسان أو إنسان واحد and the underlined أو إنسان in the middle fell out due to repetition. Alternatively, if Uṣṭāth's Greek exemplar had exactly the alpha reading but he took the *estin* predicatively, his original translation likely had something like (الإنسان هو إنسان (أ) وإنسان (b)). If it was إنسان هو إنسان أو إنسان واحد, this could easily be corrupted into إنسان هو أو إنسان واحد due to the repetition of إنسان in this passage. Finally, it is also possible that Uṣṭāth's exemplar had τὸ ἐστὶν ὁ ἄνθρωπος καὶ εἷς ἄνθρωπος. When there is a disagreement between a text in the source language and its translation in the target language, if the presumed version of the text in the source language does not have any independent witnesses, we should prefer the explanation that address whether the translator could misread the text in the source language or whether the translation could be corrupted along the way over positing that the exemplar of the translator in the source language had exactly the backtranslation of the translation as the translation came down to us.

I said above that Uṣṭāth's translation has a greater tendency to agree with the readings of the alpha tradition but this does not seem to be universally so. So it is also worth considering how we should understand Uṣṭāth's translation if his Greek exemplar had the reading of the beta tradition. First of all, in this case, the translation of the underlined passage in (a) would be corrupt and its version in Uṣṭāth's original translation would be something like إنسان واحد أو أنسان هذا أو إنسان هو أو إنسان هذا and in that case it would not be difficult to explain the omission of the underlined هذا إنسان أو along the way. As for the underlined passage in (b), Uṣṭāth could translate εἷς ἐστὶν ἄνθρωπος καὶ ἔστιν ἄνθρωπος as إنسان هو أو إنسان واحد or as إنسان هو أو إنسان هو واحد swapping the order of εἷς ἐστὶν ἄνθρωπος and ἔστιν ἄνθρωπος. Alternatively, if he took the second *estin* to be predicative, with the same subject (i.e., ἄνθρωπος) as the first *estin*, he could translate it, again swapping the order of conjuncts, as إنسان هو إنسان أو واحد and the corruption of this into what we have in Averroes (إنسان هو أو إنسان واحد) can be explained by the hypothesis that a copyist forgot the أو, and then the corrector put a mark roughly above the second إنسان to indicate that the أو in the margin should come *after* إنسان but a later copyist took the sign to indicate that the أو in the margin should come *before* إنسان. So, if Uṣṭāth's Greek exemplar had the beta reading, we must assume that Uṣṭāth changes the order of the conjuncts in the underlined passage in 2-β (2). This by itself is not a decisive reason to accept the view that Uṣṭāth's Greek exemplar did not have the beta reading; nonetheless, I think that this consideration combined with the fact that Uṣṭāth has a general tendency to agree with the readings of the alpha tradition over the readings of the beta tradition when the two disagree should persuade us to favor the view that Uṣṭāth's Greek exemplar had the alpha reading here.

Finally, as I indicated above, the underlined passage in (c) in the Arabic translation does not correspond to anything in the Greek original but it is Uṣṭāth's interpretation of the unstated subject of οὐ χωρίζεται. As I argue in Section 3.b, since Aristotle basically says that *ōn/ousa/on* X and X are the same, and *heis/mia/hen* X and X are the same in the preceding passage (i.e. T1 (2)) and since at the end of (3) he says, "and it is also like this in the case of the one," when he says οὐ χωρίζεται οὗτ' ἐπὶ γενέσεως οὗτ' ἐπὶ φθορᾷς, he must be making a point about the sameness between being applied to X and X itself. Uṣṭāth takes (c) to be a justification for (b) directly but in terms of content, for (b) and (a) together. So, it would not be surprising if Uṣṭāth understood the implied subject of χωρίζεται in the way that I think Aristotle meant it, he would

supply the implied subject as *إنسان هو أو إنسان هو* or perhaps *إنسان هذا* translating in his mind *ὢν ἄνθρωπος καὶ ἄνθρωπος*.

In short, whether al-Fārābī's copy of Uṣṭāth's translation was exactly like what we find in the Textus in Averroes' commentary, or whether the relevant details in his copy of Uṣṭāth's translation was closer to the reading of the alpha tradition of the Greek text in ways I specified above, al-Fārābī would read a text that basically conveys the idea that being added to X does not mean anything other than X in the relevant way and likewise one added to X does not mean anything other than X in the relevant way.

Appendix: Iota 2 version of the being-unity equivalence argument in Uṣṭāth's Arabic translation
Compared to the Γ.2 version of the being-unity equivalence argument, it is easier to interpret what Aristotle means in the Iota 2 version of the argument because there is no disagreement in the readings of the mss. (E, J in the alpha tradition and A^b in the beta tradition as reported in Jaeger's apparatus) that makes a noticeable difference in meaning.⁷³¹ So, we have a good guess of the text contained in Uṣṭāth's Greek exemplar, though we should take into consideration the fact that the quality of his ms. might have impacted the legibility of some words, and as we will see, for one reason or another, Uṣṭāth understands his Greek text as if the diacritics of the three *ἐν* ("in") at 1054a14-5 were *ὅν* ("one").

In what follows, my main aim is not to evaluate whether the text Bouyges prints in the Textus was most likely the text Averroes copied into his commentary from his copy of Uṣṭāth's translation. I mostly agree with Bouyges in this respect, but as I will explain below, in a few places Bouyges might be improving on the text that was actually in Averroes' original. In any case, my primary aim is to comment on how Uṣṭāth's original Arabic translation might have looked like. For this purpose, I divide the text of the Iota 2 version of the being-unity

⁷³¹ The only difference between the readings of the Greek mss. is that the alpha tradition omits the second *τὸ* in *τὸ ἐν καὶ τὸ ὃν* at 1054a13 but this does not make a difference in meaning. Jaeger reports that although all three mss. read *τῷ μὴ προσκατηγορεῖσθαι* at 1054a16, Ps-Alexander's paraphrase reads *οὐ τῷ προσκατηγορεῖσθαι* and this reading is also noted in E as a variant reading (E γρ). Yet we do not have a good contextual reason to abandon the reading of the mss. for a paraphrase in a medieval commentary and the report of a variant reading in a ms. In any case, Uṣṭāth's Greek exemplar clearly had the readings of the Greek mss., as he translates this passage as *بأنه لا يزداد على مقالاتها...* while if he read *οὐ τῷ προσκατηγορεῖσθαι*, we would expect him to translate it as something like *لا بأنه يزداد على مقالاتها...*

equivalence argument into numbered chunks following the division in T10 in Section 3.c, and I will discuss how for each chunk Uṣṭāth likely read the Greek text in his exemplar and how he likely expressed his understanding of that chunk in Arabic in his original translation. For this purpose, I will start by reviewing what we find in the Textus and the Citatio in the ms. of Averroes' commentary along with Bouyges' conjectures⁷³² and I will compare these with the underlying Greek text. For this purpose, I will first reproduce the Greek text and the text Bouyges prints in the Textus, and then comment on them.

(1) ὅτι δὲ ταὐτὸ σημαίνει πως τὸ ἐν καὶ τὸ ὄν, δῆλον

وأما أن معنى الواحد هو هو بنوع ما بمعنى الهوية فيبين

The underlined expression reads بالمعنى in the Textus of the ms. In his commentary, Averroes does not cite this passage but presents the basic sense of the passage correctly. I think it is perfectly possible that Averroes found بالمعنى in his copy of Uṣṭāth, but he got correctly what Aristotle meant given the context, the earlier interpretations of Aristotle (e.g., al-Fārābī and Avicenna) that Averroes uses, and perhaps also using the other translation of Iota, possibly by Ishāq,⁷³³ from which he occasionally quotes in his commentary as the “other translation [*tarjama ukhrā*].”

That said, I think that Uṣṭāth original read ما معنى, given the underlying Greek text and given that بالمعنى does not make good sense to begin with. Bouyges correctly identifies that با can be a mistake for ما and I understand that Bouyges makes the more conservative assumption that the remaining لمعنى was a corruption of بمعنى as without the diacritic, *bā'* in the initial position could be mistaken for *lām* in the initial position especially if the vertical stroke of the *bā'* was written a bit longer than usual but I do not see what بمعنى would mean in this sentence. It is clear from the underlying Greek text that *to hen* and *to on* are said to signify the same thing in some way, and this would naturally be expressed as

.وأما أن معنى الواحد هو هو بنوع ما بمعنى الهوية فيبين

(2) τῷ τε παρακολουθεῖν ἰσαχῶς ταῖς κατηγορίαις

⁷³² In what follows, I do not discuss every word or expression in this passage which has a variant reading recorded in the ms. but only those that are interesting for the purpose of reconstructing Uṣṭāth's original translation.

⁷³³ See Bertolacci, *On the Arabic Translations*.

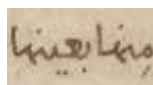
The first underlined expression, فإن, is found in this way both in the Textus and in the Citatio (1279.10). So probably this is what Averroes wrote in his original commentary but given that the parallel (*tō(i) +*) infinitives at 1054a14 and 16 (see the beginning of (3) and (4) below) are translated using بأن, Uṣṭāth might have written بأن also here in his original translation.

The second underlined word, متابعتها, is clearly منها بعينها in the Textus of the ms.,⁷³⁴ but as Bouyges also notes, in the Citatio (1279.10), it reads بتابعها with the penultimate letter being hardly legible due to an ink stain, but if we zoom in the pdf, this letter seems like a ه.⁷³⁵ In consideration of the underlying Greek text, Uṣṭāth's original most probably had what Bouyges prints, i.e., متابعتها. It is possible but unlikely that Averroes would read منها بعينها in his copy of Uṣṭāth but then emend it exactly into the correct reading of this expression in his Citatio. So, Bouyges seems to be right that in the Textus of Averroes' original copy, this expression read متابعتها.

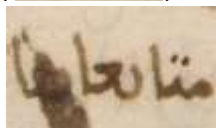
(3) καὶ μὴ εἶναι ἐν μηδεμιᾷ οἴον οὗτ' ἐν τῇ τί ἐστὶν οὗτ' ἐν τῇ ποῖον, ἀλλ' ὁμοίως ἔχει ὥσπερ τὸ ὄν

وبأن إنيتها ليست واحدة ولا أحدها وحدة مثل ما ليس واحد للمقولة⁷³⁶ التي تقال ما هي ولا للكيفية واحد بل هي متشابهة مثل الهوية

⁷³⁴ See 133r line 27:

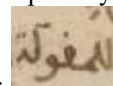


⁷³⁵ See 133v line 4:

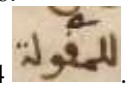


⁷³⁶ Bouyges apparatus is slightly misleading here. In the Textus of the ms., this clearly reads للمقولة in the primary

hand and I do not see any sign that it has a correction as Bouyges apparatus suggests; see 133r line 28:



As Bouyges notes, it also reads للمقولة in the Citatio, but there is a correction sign over it: 133v line 14



This sign seems to point to the correction written in the right margin more or less next to the same line: المنهوية. If this correction was made based on the Textus in the exemplar of this ms., we would expect to see a correction on this word in the Textus in the ms. but we do not have such a correction. I tend to agree with Bouyges that Averroes copied للمقولة into the Textus of his commentary. In any case, there is little doubt that this is what Uṣṭāth wrote in his original translation.

There are several issues with this clause and to settle them, first we should determine the antecedent of the pronoun *ها* in *إنيتها* (*its* (feminine) being, or *their* being) at the beginning of (3). For this purpose, it is useful to look at the pronoun *ها* in *متابعتها* in (2). Since it is unlikely that Uṣṭāth would use the same pronoun a few words apart but would mean them to have different antecedents without indicating in any way that the antecedent of the pronoun changes, it is likely that the *ها* in *متابعتها* in (2) and the *ها* in *إنيتها* at the beginning of (3) refer to the same thing (with a feminine noun) or to the same group of things.

What the pronoun *ها* in *متابعتها* in (2) refers to is not obvious. To be clear, this pronoun is not put explicitly in the Greek text. The Greek text can be translated as “from following [*tō(i) parakolouthēin*] the categories in the same number of ways.” This is expressed in Arabic as “their [or its (feminine)] kinds of following the categories are equal in number.” Likewise, the pronoun *ها* in *إنيتها* in (3) is not explicit in the Greek text. The *einai* in the Greek text is a copula, indicating that the implied subject is not in any of the categories, but Uṣṭāth reads it as if it means the being of the implied subject and he reads the following three *ἐν* (“in”) as *ὓν* (“one”). So Uṣṭāth understands the beginning of (3) as something like “καὶ [τῷ εἶναι] μὴ [τὸ] εἶναι ὓν” and translates this as *وبأن إنيتها ليست واحدة*.

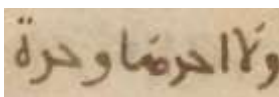
The only feminine noun mentioned right before is *huwiyya* (being) but Aristotle seems to make a point about the one here (until *ὁμοίως ἔχει ὥσπερ τὸ ὓν* at the end of (3)). So it is unlikely that the pronoun *ها* of *متابعتها* in (2) and *إنيتها* in (3) refers to being. Since Aristotle says right above in Iota 2 that *to hen = al-wāḥid* is a different thing in each genus, it would be understood that when we are talking about *to hen*, we are not talking about a single thing. So it is possible that according to this understanding Uṣṭāth thought that the implied subject in (2) and at the beginning of (3) is *to hen* as a group, i.e., the many things each of which is *to hen* in their respective genera. So, understanding Aristotle’s *καὶ μὴ εἶναι ὓν* as *καὶ [τῷ εἶναι] μὴ [τὸ] εἶναι ὓν*, Uṣṭāth would take Aristotle’s point here to be to repeat the main claim in Iota 2, namely that the substance or the essence or the being of *to hen* is not simply to be one. So, in Uṣṭāth’s translation, this gets expressed as *إنيتها ليست واحدة* (“their being [or essence, i.e., *inniyya* here, not *huwiyya*] is not one”).

That said, the first underlined expression in (3), *ولا أحدها وحدة*, complicates this picture. It would read smoothly if the pronoun *ها* also refers to the same thing, i.e., the group of things each of

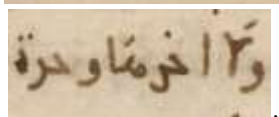
which is *to hen* in their respective genera, but it is not easy to make sense of this expression with the pronoun referring to those things given the underlying Greek text. I think this is probably not what Uṣṭāth wrote in his original translation, but let me first remark on variant readings of this expression we find in the Arabic ms. We find *ولا أحدها وحدة* in the Textus, with clear diacritics over the *tā' marbūṭa*,⁷³⁷ and we have two Citatio containing this expression. The first one (1280.12) has *ولا آخرها وحدة*,⁷³⁸ while the second Citatio (1281.3) has *ولا أحدها وحده*.⁷³⁹ Now, *وحدة* (“unity”) and *وحده* (“it alone” (masculine singular)) have the same *rasm* and can be easily mistaken for each other. Likewise, *آخر* and *أحد* also have almost the same *rasm* with *rā'* and *dāl* in the final position being hard to distinguish. *آخر* here does not make a sense here and since the Textus and one of the Citatio have *أحد*, I think it is safer to assume that this is what we had in the Textus in Averroes’ original. As for *وحدة* and *وحده*, I think it is hard to tell which one probably was copied in the Textus of Averroes’ original but perhaps it is safer to go with *وحدة* since this is what we have in the Textus of the ms. and in one of the two Citatio.

As for Uṣṭāth’s original, we should bear in mind that he was translating *μηδεμιᾷ*, which he could also read as *μηδεμία*. Recall that Uṣṭāth reads the *ἐν* that comes right before as *ἐν* so he could not miss the fact that the Greek text has the feminine adjective *μία* here. The only feminine word that is used before in the proximate context of *μηδεμιᾷ* is *κατηγορία*. In fact, as we will see, Uṣṭāth correctly identifies that the two uses of the feminine article *τῇ* in the rest of (3) refers to a *κατηγορία*. So it is hard for Uṣṭāth to miss that *μηδεμιᾷ* is a reference to a category. Recall that Uṣṭāth translated *καὶ μὴ εἶναι ἐν* that comes right before as *بأن إنيتها ليست واحدة* reading it as something along the lines of *καὶ [τῇ εἶναι] μὴ [τὸ] εἶναι ἐν*. So, he must assume that either the subject of this or the predicate of this is repeated with *μηδεμιᾷ* (or *μηδεμία*). In other words, he must have understood this either as *[τῇ εἶναι τὸ εἶναι μὴ ἐν] μηδεμιᾷ* (or *μηδεμία*) with the subject being repeated, i.e., (a) “[the being of each thing that is *to hen* in a genus is not one] and

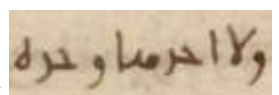
⁷³⁷ See 133r line 28:



⁷³⁸ See 133v line 11:



⁷³⁹ See 133v line 13:



it does not belong to any category either,” or (b) “... and it is not any category either,” or he must have understood this as [τῷ εἶναι τὸ εἶναι μὴ ἓν] μῆδε μία [ἓν] with the predicate being repeated, i.e., (c) “[the being of each thing that is *to hen* in a genus is not one] and nor is any category one.” We can get these three readings in Arabic with relatively small emendations in the passage we have in Averroes, i.e., ولا أحدها وحدها. ولا لإحداهما وحدها (“nor does it [i.e., the being of the one] belong to any [category] alone”) gives us the sense of (a); ولا إحداهما وحدها (“nor is it [i.e., the being of the one] any [category] alone”) gives us the sense of (b); and ولا إحداهما وإحدة (“nor is any [category]” one) can give us the sense of (c). Perhaps the easiest corruption to explain would be the corruption of (b) into what we have in Averroes, because it would not be hard for احداها to be corrupted into احدها, and then a later copyist could correct وحدها into وحده on the assumption that وحدها was a mistake for وحده because أحد is a masculine pronoun. In any case, according to all these three readings, the antecedent of the pronoun ها is assumed to be changed to the categories from the things each of which is *to hen* in a genus, but this shift would be marked by the fact that إحدى is a feminine pronoun and in the context, it would be understood that it refers to مقولة (“category”) which is feminine.

It is better to consider the remaining two underlined expressions in (3) together because the whole ليس واحد للمقولة التي يقال ما هي ولا للكيفية واحد expresses the same idea for two different categories, the category of substance (τῇ τί ἐστίν) and the category of quality (τῇ ποῖον). This passage translates οὐτ’ ἐν τῇ τί ἐστίν οὐτ’ ἐν τῇ ποῖον and Uṣṭāth clearly read the two “ἐν”s in this passage again as “ἔν.” He correctly identifies that the feminine definite article τῇ refers to a κατηγορία. We have ما هي in the Textus and ما هو in the Citatio (1281.4). It could be either in Uṣṭāth’s original translating τί ἐστίν. المقولة التي يقال فيها هو sounds better to my ear as an expression of the category of substance, translating ἡ [κατηγορία] τί ἐστίν but I do not have so strong an instinct for this as to conjecture that Uṣṭāth’s original had فيما instead of ما we find in Averroes.⁷⁴⁰ So, Uṣṭāth translates οὐτ’ ἐν τῇ τί ἐστίν as ليس واحد للمقولة التي يقال ما (فيما؟) هي (هو؟) understanding the Greek passage as οὐτ’ ἐν τῇ τί ἐστίν (“and ‘one’ does not belong to the [category of] what it is [i.e., substance]”). Since the following *oute* clause (οὐτ’ ἐν τῇ ποῖον) has the same structure and making the same claim but for the category of quality, we would expect Uṣṭāth to translate this as ولا للكيفية واحد, again reading ἐν as ἔν. ولا للكيفية واحد is indeed what

⁷⁴⁰ Or perhaps Uṣṭāth’s original read: ... التي تقول ما هي?

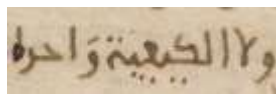
Bouyges prints and I think that this is what Uṣṭāth wrote in his original translation but I am not sure if this is what Averroes copied into the Textus of his commentary. In the Textus of the ms., we have *ولا الكيفية واحدا* but apparently a later hand corrected *واحدا* into *واحدة*.⁷⁴¹ *واحدا* is clearly the difficult reading here because it does not agree in gender with *الكيفية*, and this is why it was corrected into *واحدة*. The Citatio (1281.4-5) clearly reads *ولا الكيفية واحدة*.⁷⁴² Now, *الكيفية* and *للکيفية* can get easily mixed up and Averroes might have wrote *ولا للکيفية واحد* in the Textus of Averroes' original as Bouyges prints and as I think Uṣṭāth wrote in his original; that said, given that both the Textus and the Citatio in the ms. have *الكيفية*, it is also possible that Averroes copied into the Textus of his commentary *ولا الكيفية واحد*, and a copyist of Averroes' commentary wrote *واحدا*, assuming that it is a predicate governed by *ليس* having *الكيفية* as its subject. Whatever Averroes copied into the Textus of his original, it is clear that Uṣṭāth most probably wrote the expression Bouyges prints in the Textus, i.e., *ولا للکيفية واحد*.

(4) τῷ μὴ προσκατηγορεῖσθαι ἕτερόν τι τὸ εἰς ἄνθρωπος τοῦ ἄνθρωπος ὥσπερ οὐδὲ τὸ εἶναι παρὰ τὸ τί ἢ ποῖον ἢ πόσον καὶ τὸ ἐν εἶναι τὸ ἐκάστῳ εἶναι.

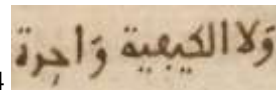
وبأنه لا يزداد على مقالتها شيء آخر مثل واحد إنسان على إنسان كمثل ما ولا بالإنية ما خلا أي شيء أو أي أو كم والذي هو إنية الواحد أيضا لإنية كل واحد.

It is not clear why Uṣṭāth translated οὐδὲ τὸ εἶναι παρὰ τὸ τί ἢ ποῖον ἢ πόσον as *ولا بالإنية ما خلا أي*. First of all, the underlined *خلا* is clearly meant to translate *παρά* (“beyond” or “over and above” “besides”). The Textus in the ms. reads *خلا* but the two Citatio (1281.12, 1282.2) have *خلي*.⁷⁴³ *Khalā* ‘an or min can mean “be free from” and that would convey the sense of “beyond” or “over and above.” As far as I can see from the entry on this verb in Lane, when the verb *khalā* governs a direct object, apparently as it does here, it means “pass away from [the direct object],” e.g., *خلاك ذم*, “Blame passed away from thee,” *خلاه الخزن*, “Grief passed away from

⁷⁴¹ 133r line 28



⁷⁴² 133v line 14



⁷⁴³ See 33v line 17



and line 19 *خلي*. I do not think the second form verb *خلى* makes sense here. That is why I read these as *خلى*.

him” and “quitted him” (Lane, 804a).⁷⁴⁴ The adjective *khaliyy* can also have the sense of “free from” with the prepositions ‘*an* or *min*, and even though I am not familiar with the use of this adjective in a construct state (e.g., *khaliyy*^u *X*_{gen}) to mean “free from X,” it seems to be used in this way in the two Citatio (i.e., *khaliyy*^u *ayy*ⁱ *shay*ⁱⁿ to mean “free from whatever thing”). I went through how Uṣṭāth translates *παρά* in the sense of “beyond,” “besides,” “over and above” in the *Metaphysics* from Zeta to Iota. He often translates it with *ghayr*,⁷⁴⁵ but rarely he also translates it using *mā khalā* with the direct object or *mā khaliyy* in a construct state.⁷⁴⁶ So it seems that it could also be *خلا* or *خلي* in the passage under consideration (i.e., (4) in the Iota 2 version of the being-unity equivalence argument).

So, when Uṣṭāth translates οὐδὲ τὸ εἶναι *παρὰ* τὸ τί ἢ ποῖον ἢ πόσον as *ولا بالإنية ما خلا أي شيء أو أي* أو كم, he uses *خلا* (or *خلي*) to translate *παρὰ* and he seems to read the τί in τὸ τί not as the interrogative pronoun, as it should be because Aristotle means this to indicate the category of substance, but Uṣṭāth seems to read it as *τι*, the indefinite pronoun. This is why he translates τὸ τί (reading it as *τό τι*) as *أي شيء*, i.e., “whatever thing.” If Uṣṭāth took it in the sense of signifying substance, as Aristotle seems to mean it, Uṣṭāth would have probably translated it as *ما هو* (or *ما هي*) as we have a few lines above when he translates τί ἐστὶν at 1054a15. It seems that Uṣṭāth did not take τὸ εἶναι to mean *being*, as Aristotle seems to mean it; if Uṣṭāth understood it that way, he would have probably translated it using *huwiyya*. Instead, he seems to have understood it in the sense of essence, and that is why he translates it using *inniyya* (as in his translation of εἶναι at 1054a14). The essence of what, though? It seems that Uṣṭāth still takes it to be about the one. So, he seems to read οὐδὲ τὸ εἶναι *παρὰ* τὸ τί ἢ ποῖον ἢ πόσον not as a claim about being, as Aristotle seems to mean it, but still as a claim about the one, namely as the claim that the essence of *to hen* is not something over and above some particular thing that is *to hen* in the appropriate genus, or

⁷⁴⁴ It is also noted in Lane 804c that *خَلَا* governing a genitive or an accusative and *خَلَا* *ما* governing an accusative can mean “except,” but I do not think that Uṣṭāth would understand the *παρὰ* under consideration to mean “except.”

⁷⁴⁵ In *Met. Z*: 1028b29 (= 766.3 in Uṣṭāth’s translation in Averroes’ *Long Commentary*), 1031b1 (822.12), 1033b20 (864.12), 1033b27 (865.4), 1037a10 (928.11), 1038a5 (948.2), 1038b33 (967.14), 1039b16 (979.4), 1040a20 (988.8), 1040b31 (1003.5), 1041a 2 (1003.9). In *Met. H*, 1042a23 (1026.1), 1043b11 (1056.11), 1043b20 (1057.6), 1045b7 (1097.2). In *Met. Θ*, 1050a26 (1191.5). In *Met. Iota*, 1053b18 (1268.13).

⁷⁴⁶ 1028b30-1 *καὶ διὰ τί καὶ πῶς, ἢ οὐδεμία, παρὰ τὰς αἰσθητάς* = *ولم وكيف أم ليس ولا واحد ما خلي المحسوسة* (766.4-5). 1050a24-5 *οἷον ὄψεως ἢ ὄρασις, καὶ οὐθὲν γίγνεται παρὰ ταύτην ἕτερον ἀπὸ τῆς ὄψεως* = *مثل النظر للبصر ولا يكون علم* (1191.3-4). 1050a34-5 *ὅσων δὲ μὴ ἔστιν ἄλλο τι ἔργον παρὰ τὴν ἐνέργειαν* = *وأما جميع التي ليس لها عمل آخر ما خلا الفعل* (1191.8-9).

a quality that is *to hen* in the appropriate genus, or a quantity that is *to hen* in the appropriate genus.

Finally, Uṣṭāth translates καὶ τὸ ἐνὶ εἶναι τὸ ἐκάστῳ εἶναι as والذي هو إنية الواحد أيضا لإنية كل واحد. On the face of it, he seems to read τὸ ἐκάστῳ εἶναι as τῷ ἐκάστῳ εἶναι but perhaps Uṣṭāth's original translation had إنية كل واحد instead of the لإنية كل واحد that we have in Averroes' commentary.

Another, and the less likely, possibility is that this clause originally had *inna* at the beginning and *la-iniyyat kull wāḥid* had the *la-* indicating the predicate in a sentence starting with *inna*.

Long story short, Uṣṭāth understood Aristotle's text differently from what Aristotle most probably means in a number of places, and if al-Fārābī read the Iota 2 version of the being-unity equivalence argument only from Uṣṭāth's translation, he would have had an even greater confusion about what Aristotle apparently proposes the sense of the one presumed in the being-unity equivalence argument to be in Iota 2 than the confusion al-Fārābī would have had if he was reading the Iota 2 version of the being-unity equivalence argument in a more faithful translation.

Conclusion

At first sight, al-Fārābī's *KW* looks like a dreadfully tedious exercise in the conceptual analysis of the different senses of unity and the corresponding senses of multiplicity and the logical relations between them. This dissertation aims to spell out how *KW*, with the closely related *KH*, shows the depth of al-Fārābī's engagement with some of the central issues in metaphysics in the Aristotelian tradition. For this purpose, in Chapter 1, I placed *KW* along with al-Fārābī's other metaphysical works in the context of his understanding of metaphysics as a demonstrative science. In the rest of the dissertation, I explained some of al-Fārābī's major theoretical interests that guided him to evaluate the ideas he received from the earlier Aristotelian discussions of unity and to improve on them to solve the problems or to remedy the shortcomings he detected in the earlier discussions of unity in the Aristotelian tradition. In particular, I focused on two major differences between al-Fārābī's account of unity and Aristotle's account of unity to orient my discussion. Even though al-Fārābī starts from Aristotle's account of unity, especially his account in *Met. Δ.6*, al-Fārābī interprets the sense of unity in number (*hen kat' arithmon* or *arithmō(i) = wāḥid bi-l- 'adad*) in a way quite different from the way Aristotle understands it in the *Metaphysics*. I argued in Chapter 2 that unlike Aristotle, al-Fārābī is interested in explicitly distinguishing the senses of unity used in one-place contexts and the senses of unity used in many-place contexts. To put it simply, two things are said to be one in genus, species, or accident because their genus, species, or accident is one; two things are said to be one in subject because their matter or their subject of predication is one; two quantities are said to be one *qua* continuous because they share an extremity (*nihāya*) which is one; two things are said to be one *qua* a totality (*jumla*) either because they are bodies which are in contact and are linked (*murtabiṭ*) to each other by something (glue, welding etc.) which is one or because they are incorporeal and they are linked to each other by something which is one (e.g., the middle term linking the extreme terms in a syllogism). Al-Fārābī's analysis of these ordinary senses of unity used in many-place contexts led him to realize that, generally speaking, two things, X and Y, are said to be one because something about them, Z, is one. Al-Fārābī argues that in order to avoid infinite regress or circularity, Z cannot be one in one of these ordinary senses of unity used in many-place contexts. Al-Fārābī articulates the one in number to be precisely this sense of unity that grounds the mentioned ordinary senses of unity used in many-place contexts. So, X and Y are said to be one because Z is one in number, and when we say that Z is one number, we mean

that Z as it relates to X is the same as Z as it relates to Y. So, when we say that Z is one in number, we make a claim about a single thing insofar as it is considered in its relation to one thing and insofar as it is considered in its relation to another thing, and these considerations describe not different parts of Z but one and the same Z twice. So, when we say that Z is one in number, we indicate that Z *qua* itself, i.e., by its essence, is ‘undivided’ or ‘not multiplied’ by these two relations. I show that al-Fārābī’s direct source for articulating his sense of unity in number with the features required for it to ground all the ordinary senses of unity used in many-place contexts is not Aristotle’s discussion or use of the one in number in the *Metaphysics*, but Aristotle’s account of (the one and) the same in number in *Top.* I.7.

Of the senses of unity used in one-place contexts that al-Fārābī discusses, presumably the most important for his overall metaphysical project is the sense of the one *qua* circumscribed (*munḥāz*) by a quiddity (*māhiyya*), and this brings me to the second major difference between al-Fārābī and Aristotle that I address in Chapter 3. Al-Fārābī’s senses of unity by virtue of circumscription by a place (*makān*) or by an extremity (*nihāya*) or by a quiddity are not discussed by Aristotle at all. To put it generally, according to these senses of unity, X is said to be one because it is circumscribed by Y, and this means that X ‘has’ Y and only X ‘has’ Y (among the things in the relevant class) according to some relevant specification of ‘having’. X is said to be one in this sense because Y ‘packs’ X into a whole so that the parts of X ‘packed’ by Y are not a mere heap but parts of a genuine whole, and Y separates X from other comparable things. In this way, Y individuates X so that we can quantify over X along with the comparable things, because by using Y, we can identify X in the sense of not mistaking it for something else among other comparable things, and we can track X over time and in some cases also across possible situations.

I argued that al-Fārābī did not simply take his senses of unity by virtue of circumscription from earlier sources, but a number of late antique Greek philosophical texts use *perigraphē* (and the related terms) to express the idea of circumscription al-Fārābī expresses using *inḥiyāz*. Even though these Greek texts do not contain fully developed ideas of unity by virtue of circumscription as we find in al-Fārābī, it is likely that in them al-Fārābī found starting-points or confirmations for his ideas of unity by virtue of circumscription. In dialogue with these sources, al-Fārābī develops his senses of unity by virtue of circumscription, and especially the sense of

unity by virtue of circumscription by a quiddity, and then he uses this idea to articulate a corresponding sense of being, namely, the sense of being by virtue of circumscription by an extramental quiddity. Aristotle presents an argument for a strong equivalence between being and the one in *Met.* Γ.2 and there is a version of this argument in Iota 2 too. It seems that this is the only argument Aristotle presents to justify the inclusion of the study of the one (and its kinds or *per se* attributes and their opposites) in the science of being *qua* being, i.e., metaphysics. So, this argument is important for justifying why metaphysics is not two separate sciences, a science of being and a science of unity, equivocally bearing the same name, but is a genuinely single science. A fair reading of Iota 2 suggests that Aristotle identifies the sense of unity presumed in the being-unity equivalence argument to be the sense of unity *qua* the first measure of a genus in the way that, e.g., the phonemes are the measures of the articulate sounds, but this identification generates problems. I argued that al-Fārābī's main motivation for developing the sense of unity by virtue of circumscription by a quiddity and the corresponding sense of being was to develop senses of being and unity that satisfy what is expected in the being-unity argument well without causing those problems, and he developed these senses of being and unity drawing on Aristotle's idea from *Met.* Z.17 and H that basically any real thing *is* and *is* one because of its essence. In other words, al-Fārābī sought an Aristotelian solution to a problem that apparently emerges from Aristotle's account in Iota 2, and in doing so, he found starting-points or confirmations for his idea of circumscription mostly in late antique Aristotle commentaries.

Besides the senses of unity by virtue of circumscription by a place, or an extremity, or a quiddity, al-Fārābī distinguishes some other senses of unity used in one-place contexts. One of these senses of unity used in one-place contexts is closely related to the senses of unity by virtue of circumscription and is briefly discussed in Chapter 3, that is, the sense of unity *qua* unique, i.e., not having a co-participant (*qasīm*) in a characteristic (*ṣifa*) that it has, be it an essential characteristic (e.g., the moon is one in this sense because it is unique in its species) or an accidental characteristic (e.g., the coin in my hand is one in this sense because it is unique in relation to this time and to my hand). The remaining senses of unity used in one-place contexts that al-Fārābī distinguishes in *KW* are as follows (according to their order of presentation in the first part of *KW*): something is said to be one because it is not divided into more specific subjects (e.g., a particular substance) (*KW* 18 = 50.7-13), or it is not quantitatively divided (e.g., the point) (*KW* 20 = 51.4-8), or it is quantitatively divided but assumed not to be so for some reason

(e.g., a piece of rock because it is too hard to divide) (*KW* 21 = 51.9-17), or it is not divided into accidents (i.e., does not have multiple accidents) (*KW* 22 = 52.1-3), or it is not divided along with the inflections (*taṣārīf*) of the expression denoting it (e.g., God insofar as he is called intellecting (‘*āqil*), intellected (*ma’qūl*), and an intellect (‘*aql*)) (*KW* 23 = 52.4-8), or its quiddity is not divided (e.g., God, the highest genera) (*KW* 24 = 52.9-10). I have not discussed above these remaining senses of unity used in one-place contexts because either they can be easily traced back to some ideas in Aristotle or they do not have a comparably central role in al-Fārābī’s metaphysical system as the sense of unity by virtue of circumscription by a quiddity has.⁷⁴⁷

Al-Fārābī wants to establish that to be one in any sense of unity is to be undivided in some respect as specified by that sense of unity. He would be successful in this endeavor if we help him spell out some details he overlooks and if we allow ourselves to force some senses of unity under a specification of undividedness, but we will see that this is not the most interesting thing about al-Fārābī’s account of unity. Nonetheless, it is worth noting that the claim that every sense of unity is a specification of undividedness is a stronger claim than the claim that to be undivided is common to all senses of unity in the sense that being undivided is necessary for something to be one in any sense of unity. It seems that for Aristotle to be undivided is common to all senses of unity, including unity *qua* measure. All the senses of unity other than unity *qua* measure are specifications of being undivided (*Met.* Δ.6 1016b3-6, Iota 1 1052a36-b1), and being undivided is *necessary* for the sense of unity *qua* measure to apply because the measure is either undivided or it is treated as undivided insofar as it is the measure, and what is one *qua* measure paradigmatically, i.e., the unit (*monas*), is undivided in a strong sense, i.e., that it is not divided quantitatively at all and is without a position (Δ.6 1016b23-6, Iota 1 1052b31-3a14, 1053a18-24, 1053b4-8). That said, being a measure is not a specification of being undivided; the clearest indication of this is that the one and the many as undivided and divided are opposed to each other

⁷⁴⁷ This is not to say that these remaining senses of unity are not used by al-Fārābī in his metaphysical discussions. As mentioned in Chapter 1 Section 6, God, and also the highest genera, i.e., the categories themselves, have undivided quiddities. God is clearly the summit of the metaphysical inquiry, and as discussed in Chapter 1 Section 6, it seems that metaphysics studies things with undivided quiddities, so apparently including the highest genera. The sense of the one *qua* having an undivided quiddity applies to God and also to the categories themselves, both of which are studied by metaphysics. Also see Janos, *On the One and Oneness*, 121 for the application of the sense of unity *qua* not divided along with the inflections (*taṣārīf*) of the expression denoting it to God (i.e., God is one in this sense because he is intellecting (‘*āqil*), intellected (*ma’qūl*), and an intellect (‘*aql*), but being these three things does not entail a multiplicity in the essence of God). More generally, see that section (“Some Theological Implications of *On the One*”) in Janos, *On the One and Oneness*, 116-121 for the relevance of some of the senses of unity al-Fārābī distinguishes in *KW* for his views on God.

as contraries, while the one and the many as the measure and the measured are opposed to each other as correlatives.⁷⁴⁸ So to be a measure is conceptually distinct from to be undivided as what is said to be one as a measure is said to be one *in relation* to the many that it measures, while what is said to be one as undivided is said as the *contrary* of the many as divided. So according to Aristotle, everything that is said to be one is *necessarily* undivided in some respect; according to all the senses of unity except for one, it is said to be one *because* it is undivided in some respect; however, according to the sense of unity *qua* measure, it is *not* said to be one because it is undivided in some respect. Rather, what is one *qua* measure is *necessarily* undivided in some respect (or treated as undivided insofar as it is treated as a measure), but it is said to be one *qua* measure *because* it is the measure of a genus and being a measure is not a specification of being undivided because measure is a relative but undivided is not. Let me illustrate this with an example. Let's assume that all animals reproduce sexually and that having male and female members is a feature necessarily shared by all animals as their *per se* attribute. In this respect, having male and female members would also be a *per se* attribute of humans and cats, but to be a human or to be a cat is not a specification of being male or female. I do not claim that to be a measure is a *per se* attribute of being undivided; it is not. Also, I do not claim that being undivided is, *strictly speaking*, a genus of, e.g., qualitatively undivided and quantitatively undivided. In fact, as a term used in multiple categories, undivided is not a univocal term, so it cannot be a kind, strictly speaking. But the situation is similar in that if the *per se* attribute of a kind belongs to something, that kind also necessarily belongs to this thing, but the *per se* attribute is not a specification of the kind in the sense of being a subkind of this kind (or the other

⁷⁴⁸ Aristotle states at the beginning of Iota 3 that “the one and the many [*ta polla*] are opposed to each other in many ways [*kata pleious tropous*]; in one of these [ways] [*hōn hēna*] the one and the plurality [*to plēthos*] [are opposed to each other] as undivided and divided [*hōs adiaireton kai diaireton*].” In the following discussion, Aristotle reminds the reader that of the four kinds of opposition, i.e., contradictories, correlatives, privation and possession, and contraries, the one as undivided is opposed to the many as divided as contraries (Iota 3 1054a20-29). Aristotle does not mention another way in which the one and the many are opposed to each other in Iota 3, but in Iota 6, he says that the one and the many are opposed to each other as the one and the number “just as if someone would say one and ones [*hēna*] or white and whites [*leuka*], or the things which are measured in relation to the measure [*ta memetrēmena pros to metron*]” (1056b19-22). Although Aristotle seems to be talking about the one and the many generally here, it is clear that he is talking in particular about the one according to the sense of unity *qua* a measure. Further down in Iota 6, Aristotle adds, “indeed the one and the many in the numbers [*ta polla ta en arithmois*] are opposed [to each other] as a measure [is opposed] to something measured [*hōs metron metrētō(i)*]; but these [are opposed] as correlatives [*to pros ti*]” (1056b32-34). Then, apparently referring back to his account of the kinds of correlatives (*ta pros ti*) in *Met.* Δ.15 (see, in particular, 1021a26-1b3), Aristotle specifies that the one in this sense is related to the many in the way that knowledge is related to the object of knowledge (*hōs epistēmē pros epistēton*) (1056b34-7a1).

way around). Similarly, according to Aristotle, whatever is one is necessarily undivided, and according to all but one sense of unity, something is said to be one because it is undivided in some way, but there are also things which are said to be one in the sense of being a measure, and this sense is not merely a specification of being undivided.⁷⁴⁹

So for Aristotle, unity shows some degree of ‘heterogeneity’. By contrast, al-Fārābī wants to present unity as a more ‘homogenous’ idea in the sense that *every* sense of unity is a specification of a way or aspect in which something is said to be undivided. At the very end of *KW*, al-Fārābī states that something is said to be one according to any sense of unity because it is undivided in some respect that is specified by that sense of unity:

T1 *KW* 95 = 81.6-13

فهذه هي الأنحاء التي يقال عليها الواحد. ويعم جميع ما يقال فيه إنه واحد أنه غير منقسم من الجهة التي يقال له منها إنه واحد. فإن التي هي واحدة بأعيانها فإنها لا تنقسم من جهة جنسها أو نوعها أو غير ذلك، والمتصل هو غير منقسم في النهايات، والتماسة غير منقسمة في أمكنة نهاياتها فإن كل اثنين في مكان واحد أول. وكذلك كل اثنين غير منقسمين في الرباط الذي يربطهما. والذي لا قسم له كان⁷⁵⁰ وجوده غير منقسم في أكثر من⁷⁵¹ واحد، والذي هو منحاز بوجود يخصه كذلك فإن الذي يخصه غير منقسم عليه وعلى غيره.

[1] So these are the ways in which the one is said. Being undivided in the respect in which it is said to be one is common to all that is said to be one. [2] For those which are themselves one are divided neither in respect of their genus nor their species nor

⁷⁴⁹ I basically agree with Castelli that being undivided necessarily belongs to all senses of unity and the unit is undivided in a strong sense, i.e., that it is not divided quantitatively at all and is without a position. An extensive discussion of the passages I cite in support of this assertion and of the other relevant passages can be found in Chapter 6 “One, Indivisible and Measure” in Castelli, *Problems and Paradigms of Unity*, 168-214. Also, as far as I can see, Castelli does not deny that being a measure is not a specification of being undivided, i.e., to be a measure is not a way of being undivided (see, in particular, Section 6.2 “One as indivisible and one as measure” in Castelli, *Problems and Paradigms of Unity*, 176-82). I think that this point is important to bring out the difference between al-Fārābī’s wish to present a more ‘homogenous’ understanding of unity, i.e., that all the senses of unity are various specifications of being undivided in contrast with Aristotle’s more ‘heterogenous’ understanding of unity, i.e., that all the senses of unity but one are specifications of being undivided and being undivided necessarily belongs to everything that is said to be one but unity *qua* a measure is not a specification of being undivided. As I stated in Chapter 3 Section 3.c Footnote n.595, it is not my purpose in this dissertation to discuss whether being undivided or being a measure is the primary sense of unity for Aristotle and how we should understand such a primacy.

⁷⁵⁰ Perhaps we should read this as كُن because the shift to the past tense here looks a bit abrupt. Compare with the *ka-an* at *KW* 25 54.11 = 52.12 as it is printed in both editions together with my discussion of this passage in Chapter 3 Section 1.e.

⁷⁵¹ Martini Bonadeo and her team add وجه after من. This is not in the mss. and I do not think that the meaning of the sentence requires this addition.

something else, and the continuous is undivided with regard to extremities, and those which are in mutual contact are undivided with regard to the places of their extremities, for any two things [in mutual contact] are in one primary place. [It is] likewise with any two things which are not divided with regard to the bond [*ribāṭ*] which binds them. [3] The being [*wujūduhu*] of that which has no co-participant was [said above to be] not divided with regard to [subjects which are] more than one. [4] Also, that which is circumscribed by a being proper it [*wujūd yakhuṣṣuhu*] is likewise [undivided], for that which is proper to it [i.e., its being] is not divided along with it and something else [*‘alayhi wa- ‘alā ghayrihi*].

As we see in (1) in this final paragraph of *KW*, al-Fārābī presents a general account of the senses of unity he discussed above. Accordingly, something (or a group of things) is said to be one because it is “undivided in the respect in which it is said to be one.” In the rest of the paragraph, al-Fārābī specifies how this holds in different senses of unity. As we will see below, in (2) he covers the senses of unity used in many place contexts, in (3) the sense of unity *qua* unique, and in (4), the sense of unity *qua* circumscribed by a quiddity (the senses of unity by virtue of physical circumscription can be understood similarly).

Before I discuss the details of this passage, I want to make a general observation about what it means for something to be undivided or indivisible (*mē diē(i)rēmenon*, *adiaireton* = *ghayr munqasim*). As Aristotle points out towards the beginning of Iota 3, the undivided or indivisible is in some sense conceptually posterior to the divided or divisible (*diē(i)rēmenon*, *diaireton* = *munqasim*) because the undivided / indivisible is understood in terms of the divided / divisible (1054a26-9). What is undivided / indivisible is understood as the negation of what is divided / divisible in the relevant class. Since in Arabic a single term is used for the divided and the divisible (*munqasim*) and also a single term is used for their opposites (*ghayr munqasim*), I will simply talk about the divided and the undivided, but by these I mean both what is or is not actually divided and what is or is not potentially divided.

Generally speaking, being divided in some respect means being related to many things in that respect. So if a line is quantitatively divided, what we have are two one-dimensional continuous quantities, i.e., lines, but of course talking about two lines presumes an idea of one line so that we can say that we have one line here and another line there, and together we have two lines. In

other words, we try to define unity as the lack of a relation to multiple things in the relevant way, but it seems in turn that multiplicity presumes an idea of unity. To break the apparent circularity, let me posit (the one and) the same and the distinct as the basic terms. I will elaborate on this point below building on al-Fārābī's comments in *KW*. So, being undivided in some respect means *not being related to distinct things* in the relevant respect. This could mean *being related to the same thing* in the relevant respect, or this could mean *being related to nothing* in the relevant respect at all.

Now, let me return to my discussion of T1. In T1 (2), al-Fārābī goes through most of the ordinary senses of unity used in many place contexts. A group of things are said to be one in genus, species, or accident because they are undivided in respect of their genus, species, or accident.⁷⁵² A group of things are said to be one *qua* continuous because they are undivided in respect of their shared extremities. A group of things are said to be one *qua* a totality because they are undivided in respect of the bond that binds them; moreover, in the corporeal cases, they are in rigidly in contact, and as I explained in Chapter 3 Section 1, this entails that they are undivided in respect of their primary place. To put it generally, X and Y are said to be one in one of these senses because they are undivided in some respect, i.e., they are related in that respect to (one and) the same thing, Z, which is specified by the relevant sense of unity. Al-Fārābī does not address the one in number explicitly in this paragraph but I will spell out what he would say based on his account of the one in number I discussed extensively in Chapter 2.

In T1 (3), al-Fārābī specifies that something is said to be one *qua* not having a co-participant in a *wujūd* (or a feature (*ma 'nan*)⁷⁵³) that it has because this feature “is not divided with regard to [subjects which are] more than one [*fī akthar min wāḥid*].” In other words, the moon is one in this sense because it is unique in its species, moonness, and this is because moonness is not divided as belonging to distinct things as its individuals, but it is the species of only (one and) the same thing, the moon. Likewise, the coin in my hand now is one in this sense in relation to my hand and now because being in my hand now is not divided as belonging to distinct things, but the only thing that is in my hand now is this coin. So, X is said to be one *qua* unique in a feature Y because Y is

⁷⁵² Even though unity in subject is not mentioned by al-Fārābī in this passage, it is similar to unity in predicate (i.e., in species, genus, or an accident).

⁷⁵³ It seems that *wujūd* is used here not specifically in the sense of an essential feature but a feature in general, essential or accidental (i.e., in the sense of *ma 'nan*); see *KW* 25 = 52.11-53.6 with my discussion of this paragraph along with the relevant passages in *KW* in Chapter 3 Section 1.e.

not related to distinct things as belonging to distinct things but it belongs only to (one and) the same thing, X. If not being divided in some respect is to be one in the relevant respect, this explains that Y is one in the sense of not being divided in respect of subjects, or something like that, and Y's being one in this sense is the ground for X to be unique in Y. So, by not having distinct subjects, Y is one, and X is unique because Y is one in this way, but this does not directly spell out the sense in which X is one. So in T1 (3), al-Fārābī does not explain why we should think that the sense of the one *qua* unique means to be undivided in some way. That said, we can supply such an explanation. Accordingly, X is said to be one because it is unique in this feature Y, and for it to be unique in Y means for it not to have a company under Y. So X is not divided in respect of co-participants in Y, i.e., X has *no* co-participant in Y (assuming that by definition X's co-participant is distinct from X). This is a somewhat artificial understanding of uniqueness under the general understanding of being undivided stated above, but I cannot see another way for al-Fārābī to subsume the sense of the one *qua* unique under the idea of undividedness as he apparently sets out to do so in T1 for every sense of unity he distinguished in *KW*.

As discussed in Chapter 3 Section 1, the sense of unity by virtue of circumscription by a quiddity is closely related to the sense of unity *qua* unique because something is one *qua* circumscribed by a quiddity just in case it is unique in its quiddity. So, in T1 (4), al-Fārābī says that the case with the one *qua* circumscribed by “the *wujūd* proper to it,” i.e., its quiddity,⁷⁵⁴ is similar (*ka-dhālika*) to the case with the one *qua* unique in that X is said to be one in this sense because its quiddity “is not divided along with it and something else,” i.e., its quiddity is not divided as belonging to distinct things as their quiddity. That said, we have a similar problem here to the problem in the description of the one *qua* unique in T1 (3). X is said to be one in this sense because it is circumscribed by its quiddity. We can say that the quiddity of X is one in the sense of not being divided in respect of subjects, but X itself is one *qua* circumscribed by its quiddity not because X is undivided in respect of subjects. As I mentioned in Chapter 3 Section 1 and Section 3, X's being circumscribed by its quiddity seems to mean two related things; first the quiddity of X ‘wraps’ X into one whole so that it is not a mere heap of parts but it *is* a genuinely ‘unified’ thing of its sort. This is similar to the way in which the proper extremity of a body

⁷⁵⁴ Whether I am right that al-Fārābī is likely committed to the existence of individual quiddities or not, it is clear that when al-Fārābī talks about circumscription by “the *wujūd* proper to it” here, he means circumscription by a quiddity according to some understanding of quiddity. More on this issue, see Chapter 3 Section 1, especially, 1.e and 1.f.

‘unifies’ it because everything inside that proper extremity, i.e., all the corporeal parts of this body, are ‘packed’ into one whole by this extremity. But, the proper extremity of X has a different function too, namely the function of distinguishing this body from all the other bodies. Likewise, when we say that X is circumscribed by its quiddity, we *also* mean that its quiddity distinguishes it from everything else (if I am not right about the individual quiddities in al-Fārābī, we should add that the quiddity of X distinguishes it from everything else in the relevant class). To be distinguished from other things by a quiddity means more or less the same thing as being unique in that quiddity. Let me call the first function of circumscription by a quiddity the unifying function of the quiddity, and the second function of the circumscription by a quiddity the separating function of the quiddity.

We can understand the unity by virtue of circumscription by its quiddity applied to X in terms of undividedness in some respect but conceptually two functions of circumscription by a quiddity require two different respects in which X is undivided. For the separating function of the quiddity of X, saying that X is circumscribed by its quiddity practically means the same thing as saying that X is unique in its quiddity; so X is one in this respect because X is undivided in respect of co-participants in its quiddity, i.e., there is *no* distinct thing which has X’s quiddity as its quiddity.

As for the unifying function of the quiddity of X, as discussed in Chapter 3 Section 3.b, this idea ultimately goes back to *Met. Z.17* and H where Aristotle indicates that a composite substance is one thing and not a mere heap of its components and this is because of its form or essence. As I suggested above, not to be divided in some respect means not being related to distinct things in that respect, i.e., being related to *(the one and) the same thing* in that respect or being related to *nothing* in that respect. So if X is a composite thing, X is one in the sense of being circumscribed by its quiddity according the unifying function of its quiddity because X is not divided in respect of actual parts, i.e., X has *no* actual part (assuming that a part is always a proper part) and this is due to the unifying function of the quiddity of X. Alternatively, if X is a simple thing, X does not even have potential parts to begin with. So, in this case, X is one in the sense of being circumscribed by its quiddity according to the unifying function of its quiddity because X is not divided in respect of actual or potential parts, i.e., X has *no* actual or potential part.

In short, so far we saw three types of being undivided under which the senses of unity reviewed in T1 can be subsumed. The first type of being undivided is used to subsume the ordinary senses of unity used in many place contexts. The basic idea is that *distinct things* (say X and Y) are one in one of these senses because they relate in the relevant respect to *(one and) the same thing*, Z. In fact, based on the same relation we can say that X and Y are one in one of these ordinary senses of unity used in many-place contexts, if we look at the relation from the perspective of X and Y, and we can also say based on the same relation that Z is one in number, this time looking at the relation from the perspective of Z. I argued in Chapter 2 Section 2 that unity in number has some priority to its counterparts, i.e., the ordinary senses of unity used in many place contexts that it grounds. I will say more about this below.

According to the second type of being undivided, *(one and) the same thing* X is said to be one in a relevant sense of unity because it is related in the relevant sense to *(one and) the same thing* Y. According to the third type of being undivided, *(one and) the same thing* X is said to be one in a relevant sense of unity because it is related in the relevant sense to *nothing*. The senses of unity used in one-place contexts are specifications of one of these two latter types of being undivided. So, that X is one *qua* unique in Y means that X is undivided in respect of a co-participant in Y, i.e., X has *no* co-participant in Y. On the other hand, the feature Y is one because it is undivided in respect of the subjects it belongs to, i.e., Y belongs only to *(one and) the same* subject X.

According to the separating function of circumscription, we can understand one *qua* circumscribed by a quiddity similar to unity *qua* unique. According to the unifying function of circumscription, that X is one *qua* circumscribed by its quiddity Y means that X is undivided in respect of actual (or potential) parts, i.e., X has *no* actual (or potential) parts, and its quiddity Y is responsible for this. On the other hand, the quiddity of X is one because it is undivided in respect of its subjects, i.e., the quiddity of X belongs only to *(one and) the same* subject X.

In T1 which apparently sums up what is common to all the senses of unity discussed in *KW*, al-Fārābī does not mention the remaining senses of unity used in one-place contexts, namely, the one *qua* undivided into more specific subjects, the one *qua* quantitatively undivided (in fact, or assumed to be so), the one *qua* undivided into accidents, the one *qua* undivided along with the inflections of the expression denoting it, and the one *qua* having undivided quiddity, presumably because it is *obvious* from the descriptions of these senses of unity that something is said to be

one in one of these senses because it is not divided in some respect. All but one of these senses of unity used in one-place contexts can be understood in terms of the second or the third type of being undivided distinguished above. So X is one *qua* undivided into more specific subjects (e.g., a particular substance) because X has *no* more specific subject. X is quantitatively undivided (in fact or assumed to be so) because X has (or is assumed to have) *no* actual quantitative part or can have (or is assumed to be able to have) *no* actual quantitative part. X is one *qua* undivided into accidents because X has *no* accident or X has only *(one and) the same* accident. X is one *qua* having undivided quiddity because X has *no* distinct essential parts (i.e., parts of its quiddity). It seems that the sense of unity *qua* undivided along with the inflections of the expression denoting it is similar to the senses of unity used in many-place contexts because it seems that, e.g., intellecting, intellected, and intellect are one because they describe (one and) the same thing essentially, i.e. God, and in turn God is said to be one in the relevant sense as the counterpart of the sense of unity said of intellecting, intellected, and intellect, and this is similar to the way in which, e.g., Socrates and Plato are said to be one in species, and as the counterpart of this sense of unity, the human species is said to be one in number.

So, al-Fārābī can argue that all the senses of unity he distinguished in *KW* are specifications of being undivided, where being undivided in some respect means being *not related to distinct things* in the relevant respect, i.e., being *related only to (one and) the same thing* or being *related to nothing* in this respect. As I suggested above, in order not to have circularity in defining these senses of unity and the opposite senses of multiplicity, we must have some basic sense of unity (and multiplicity). To verbally mark this need for a basic sense of unity (and multiplicity), I spoke of (one and) the same thing or of distinct things. That sameness and distinctness with their connotations conceptually orient us towards such a basic sense of unity (and multiplicity) seems to be implied in some of al-Fārābī's remarks too. In the case of the senses of unity used in many place contexts, we have distinct things, X and Y, related to one and the same thing (*wāḥid bi-ʿaynihi bi-l-ʿadad*), Z. For example, Socrates and Plato are related to the human species as their species. We can tell a story from the end of the distinct things and say that Socrates and Plato are one in species because their species, human, is one and the same in number, or we can tell the story from the end of the same thing and say that the human species is one and the same in number insofar as it is considered to be the species of Socrates and it is considered to be the species of Plato. I suggested in Chapter 2 Section 2 that these two perspectives do not seem to

have equal weight in every respect. It seems that when we ask what is responsible for unity in this situation involving X and Y which are related to Z, we would name Z. X and Y are ‘unified’ by Z, but Z is not ‘unified’ by X and Y; rather X and Y fail to ‘multiply’ Z. It seems that the quiddity of Z plays an important role in explaining why X and Y failed to ‘multiply’ Z. As quoted from *KW* in Chapter 2 Section 2, Z is said to be one in number in consideration of its relation to X and Y because Z “is not deprived of [*yafqīd*] its quiddity in [these] two relations and [its quiddity] does not change with the change of these two relations, [and in this case] that which is related by one of the two relations and that which is related by the other is one in number” (*KW* 8 42.10-2 = 44.78).

As discussed in Chapter 3 Section 1.b, *KW* 26 shows al-Fārābī’s interest in (a version of) the principle of the identity of indiscernibles, i.e., that two distinct things are discernible such that one has a feature that the other one does not. At the end of *KW* 26, al-Fārābī seems to affirm that each thing is unique in its quiddity, and in this respect, each thing is distinguished from everything else by its quiddity. If a feature Y distinguishes X from other things in the relevant class, Y also identifies X in the sense that when we are presented with things from this class behind a veil of ignorance, and if we are allowed to ask only one question to each thing we are evaluating, we can correctly identify X by posing to each thing under evaluation the question of whether it has the feature Y. So if X is unique in Y, Y is an identity marker for X. Moreover, we do not only want to successfully identify X, but we want to identify it *correctly as it is*. For example, if we play this game with a black dog, a yellow cat, and a blue bird, being black is an identity marker for the dog, but it does not tell us what it is. If an identity marker is also the feature that allows us to identify the thing *correctly as it is*, i.e., if this is also an essential feature, let me call it an identity maker.

In my hypothetical game, I imagine situations where I arbitrarily pick my class of comparison. If I am right in interpreting al-Fārābī as being committed to the existence of individual quiddities, we do not need to have any such limitation in our class of comparison because whichever real entity (substance or accident) we pick, it has its own quiddity which it does not share with anything else, and its quiddity tells us correctly what it is. I will continue my account on the assumption that al-Fārābī is committed to the existence of individual quiddities. If he is not, most of the following account can still be salvaged with appropriate modifications.

So, the quiddity of X is what I called an identity maker, and even though al-Fārābī does not pursue this line of thought to its completion, it is clear that one of his interests in the sense of unity *qua* circumscribed by a quiddity is that each thing is what it is by virtue of its quiddity and is distinguished from everything else by its quiddity. To be clear, the quiddity of X allows us to identify it correctly as it is, not only in comparison with other actual things, but also it allows us to identify X correctly as it is across time and across possible situations. This thing over here now is Socrates and that thing over there ten minutes later is also Socrates and not Plato because this thing over here now is circumscribed by the quiddity of Socrates and that thing over there ten minutes later is also circumscribed by the quiddity of Socrates. The quiddity of Socrates contains the information that Socrates is human. So, with the help of his quiddity, when I correctly figure out that this thing over here now and that thing over there ten minutes later is *the same thing*, I also correctly identify that it is *the same human being*. Similar reasoning should also hold in the case of comparisons across possible situations.

In short, it seems that for al-Fārābī we can talk about sameness or distinctness based on the quiddities of things, and using this idea of sameness and distinctness, we can define appropriate specifications of being undivided. So it seems that the sense of unity by virtue of circumscription by a quiddity is more fundamental than the other senses of unity, and it is in a way not subsumed under the idea of not being divided because the idea of not being divided is understood using an idea of sameness and distinctness, and this idea of sameness and distinctness seems to be supplied by the sense of unity by virtue of circumscription by a quiddity. So, when we consider the same thing in relation to two things, as long as it is the same thing, i.e., circumscribed by its quiddity “and is not deprived of [*yafqid*] its quiddity in [these] two relations and [its quiddity] does not change with the change of these two relations,” we say that it is one in number. This sense of unity then grounds the ordinary senses of unity used in many place contexts. For the remaining senses of unity, X is said to be one because it is not divided in the relevant way; in other words, it is not related to distinct things in the relevant way, so that it is related to one and the same thing or it is not related to anything in the relevant way. We can make sense of the idea of whether we deal with distinct things or the same thing by recognizing whether we deal with distinct quiddities or the same quiddity. So, the sameness and distinctness of entities in reality (apart from the quiddities) is understood in terms of unity by virtue of circumscription by a quiddity and the sameness and distinctness of these entities is fundamental to define the other

senses of unity, but the sameness and distinctness of these entities depend on the sameness and distinctness of quiddities. Al-Fārābī does not talk about the *intrinsic* and the *basic* sense in which a quiddity is one which allows us to know that we deal with the same quiddity as opposed to dealing with distinct quiddities, but as explained in Chapter 3 Section 3.b, Aristotle seems to suggest in *Met.* H.6 that it is a brute fact that the essences are one, and following Aristotle, al-Fārābī would probably say that quiddities are primitively individuated and other things are individuated by their quiddities. That the quiddities are individuated means that we can enumerate them without duplication. That they are *primitively* individuated means that there is no further fact that grounds the fact that a quiddity is individuated. So an ‘inventory’ of reality would only list real things or features (substances or accidents) with their quiddities and the predication relation between some of them (or however we should call the real relation of the presence of, e.g., a particular whiteness in a particular dog). When we consider something or a group of things to be one in some sense of unity, we consider it or them to be undivided in some respect, and their undividedness in that respect is ultimately meaningful because reality is furnished with entities each of which is the same as itself and distinct from others, and this idea of the sameness and distinctness of these entities depends on the intrinsic and basic sameness and distinctness among the quiddities. So when we say that something is one in some sense of unity used in one-place contexts or that a group of things are together one in some sense of unity used in many-place contexts, we do not add anything to our reality ‘inventory’ but we describe the things that are already there in terms of some determinate kinds of relations, or the lack of such relations, among these things.

Part I: The ways in which things are said to be one⁷⁵⁵

Chapter I: ‘One’ said of the congruence of a multiplicity in a genus, a species, or an accident

(1) Al-Shaikh Abū Naṣr Muḥammad b. Muḥammad b. Muḥammad al-Fārābī (may God have mercy upon him) said:

‘One’ is said in many ways. Among [these ways], ‘one’ is said of a multiplicity, and even this has different kinds: among them is ‘one’ which is said of the totality [*jumla*] of a totality; another is ‘one’ which is said of the congruence of a multiplicity in a genus, a species, or an accident. For we say with regard to a pair of things in different contexts that these two are one, and that this and that are one without any difference between them. [37]

(2) We say this only with regard to a pair of things whose proximate genus is one, as in our statement about donkey and horse that they are one with respect to animality if animal which is their genus is one; or with regard to a pair of things whose ultimate species is one, as in our statement about Zayd and ‘Amr that they are one with respect to humanity if human –their proximate species- is one. It is often not said with regard to [a pair of things] whose species is one that they are one in species; instead, they are said to be one in genus because of their falling under the species which is under that genus, like isosceles, scalene, and equilateral [triangles]. This is because all of them fall under triangle which is their proximate species, and the genus of triangle is figure; although these three are not said to be one triangle, ‘one figure’ is said with regard to them collectively and by themselves ‘one [type of] figures’ [*ashkāḷ wāḥida*]. These came to be said to be one in their genus [i.e., figure] on account of their falling under the species that is under this genus. We may say with regard to a pair of things that they are one whenever the formula [*qawl*] denoting their quiddity [*māhiyya*] is one and the same.

[38] (3) It may also be said with regard to a pair of things of which one accident is predicated that these two are one by virtue of that one accident, as in the case that snow and milk are one by

⁷⁵⁵ All headings and paragraph numbers are introduced by Mahdi. I add the page numbers in Mahdi’s edition in square brackets. As indicated in the Introduction above, this translation was done originally on the basis of Mahdi’s edition. I consulted the mss. and the more recent edition by Martini Bonadeo and her team on several passages and I noted below if I adopted their readings against Mahdi but the limitation of time prevented me from doing a thorough comparison between their edition and Mahdi’s edition against the mss. I intend to do this in the future iteration of this dissertation.

virtue of the fact that they are characterized by white. It may also be said with regard to a pair of things that they are one if they are under one proximate species and most of their sensible accidents are from one species, just as two waters coming out from one spring. For whatever is like this, both of them resemble each other in virtue of many things, and the similarity between them is a strong similarity in species or [in] number. Again, we may also say with regard to any pair of things each one of which on its own leads to [yūṣalu ilā] one aim that they together are one, as we say with regard to most of such pairs ‘use whichever you want because they are one’. We may also say with regard to any pair of things of the sort that the relation⁷⁵⁶ of one of them to something is like the relation of the other to another thing that they are one, with the species of their relation being one. For they fall under [two things] of which two accidents under one species are predicated, so they reduce to [those two] which are one by virtue of the fact that what is predicated of them is one accident. Of the pair of things presented above, [as for] the two things of which it is said that they are one on account of the fact that they perform a function which is one in species, they fall [39] under [two things] of which one accident is predicated. Likewise, [as for] a pair of things each one of which on its own leads to an aim which is one in species, they fall under [two things] of which an accident which is one in species is predicated. What is predicated of them are two accidents from one species, and then these two accidents are one by virtue of the fact that one accident is predicated of them.

(4) [As for] any two things which were said to be one [above] on account of the fact that one thing is predicated of them, they were said to be one only⁷⁵⁷ on account of the fact that their predicate is one, for it is clear that the sense of the ‘one’ which was said of them both is different from the sense of the ‘one’ which was said⁷⁵⁸ of their predicate.⁷⁵⁹ Thus, this sense correctly applies to them only on account of the ‘one’ which is said of their predicate, [while their predicate] is said to be one not on account of something that was predicated of it, but *per se* [*bi-dhātihi*] and by itself [*bi-nafsihi*]; so their predicate is said to be one in number. Thus, any two

⁷⁵⁶ Throughout the text, both ‘نسب’ and ‘أضاف’, and their verbal nouns ‘نسبة’ and ‘إضافة’ are translated as ‘to relate’ and ‘relation’ respectively, as there is no evidence suggesting that Farabi uses these two terms to make a conceptual distinction in this text. ‘نسب’ and its verbal noun are used much more frequently than ‘أضاف’ and its verbal noun. So, only ‘أضاف’ and its verbal noun are mentioned in brackets; otherwise, ‘to relate’ and ‘relation’ translate ‘نسب’ and ‘نسبة’ respectively.

⁷⁵⁷ Reading إنما with Martini Bonadeo and her team instead of إن ما in Mahdi and the mss.

⁷⁵⁸ Reading قيل with all the three mss. and Martini Bonadeo and her team as opposed to Mahdi’s يقال.

⁷⁵⁹ Reading محمولهما on Mahdi’s suggestion.

things become one only by virtue of the predicate which was predicated of them even if the predicate is one in number.

(5) Then, we must talk about what [the one by virtue of the subject which is]⁷⁶⁰ one in number means. [40] Among these is the case that we say with regard to a pair of things that they are one if their matter [‘*unṣur*’]⁷⁶¹ is successively one in number, just as the silver that used to be a crown but of which an anklet was made, for we say that the crown and the anklet are one, since their matter is one in number. It is likewise with [two things] whose matter is one in species, as a door and a bed if they are made of wood, for their matter is one in species, regardless of whether that is a proximate or remote matter –it is the remote matter in the case of liquor and lead, since their remote matter is water and it is one in species– and these [two] are one in species for the species by virtue of which they are one is one in number. We may also say that two accidents predicated of a subject which is one in number are one, as white and tall are one if they are characterizations [‘*ṣifatayni*’] of one subject. We may also say that an accident and a genus which are predicated of a subject which is one in number are one, like white and human, for they are one if they are predicated of Zayd or ‘Amr.⁷⁶² [41] In general, it is said with regard to any pair of things that,

⁷⁶⁰ I add الموضوع الواحد بالموضوع instead of Mahdi's الموضوع.

⁷⁶¹ I translate both ‘عنصر’ and ‘مادة’ as ‘matter’. In the rest of the text, whenever the word ‘matter’ appears unmarked, it translates ‘عنصر’; when it translates ‘مادة’, it is mentioned in brackets.

⁷⁶² This sentence and the previous sentence are translated according to the text printed in both editions. These two sentences read as follows in the mss. (ignoring the variant readings that do not make an important difference in meaning):

وقد نقول في عرض وجنس يحملان على موضوع واحد بالعدد إنهما واحد، مثل الأبيض والطويل إنهما واحد، إذا كانا صفتين لموضوع واحد. وقد نقول في عرض وجنس يحملان على موضوع واحد بالعدد إنهما واحد، مثل الأبيض والإنسان، فهما واحد إذا كانا يحملان على زيد وعمرو. Both editions emend the first underlined عرض وجنس into عرضين as required by the sense. That said, in the later summary of the cases of this sense of unity in subject of predication in paragraph 86, al-Fārābī mentions three cases: 1. Multiple accidents, 2. An accident and a genus, 3. An accident and a species. Also, when he talks about the sense of unity in number that is the counterpart of these cases of the unity in subject in paragraph 7, he spells out cases of the one in number corresponding to these three cases. Finally, in paragraph 7, إنسان and أبيض are together given as an example of the case with a species and an accident while ذو رجلين and حيوان are given as an example of the case with a genus and an accident. Indeed, it would be unusual for al-Fārābī to mention إنسان as an example of a genus, as the two sentences from paragraph 5 quoted at the top of this footnote are printed in both editions. So, this passage in the mss. is corrupt one way or another, and it is possible that a full line fell out and before مثل الأبيض والإنسان in the second sentence, we should add مثل الحيوان وذو رجلين فهما واحد إذا كانا يحملان على الإنسان. وقد نقول في عرض ونوع يحملان على موضوع واحد بالعدد إنهما واحد. With this addition, the passage under consideration can be translated as follows (with the added passage underlined):

“We may also say that two accidents predicated of a subject which is one in number are one, as white and tall are one if they are characterizations of one subject. We may also say that an accident and a genus which are predicated of a subject which is one in number are one, like animal and two-footed for they are one if they are predicated of human. We may also say that an accident and a species are predicated of a subject which is one in number are one, like white and human, for they are one if they are predicated of Zayd or ‘Amr.”

although they are two, they are one only either in case their predicate is one in number, [or in case their subject is one in number].

Chapter II: One in Number

(6) So now we must talk about what the one in number is, for it is that on account of a relation [*iḍāfa*] to which several things were said to be one [above]. So the most proper of that which is said to be one in number is what is named by two names, for that which is named by this and that which is named by that name⁷⁶³ is one and the same, regardless of whether that is an individual or a species. As for the individual, it is like this human if he is named by two names, or has a name and a *kunya*. As for the species, it is like mantle and cloak⁷⁶⁴ for that which is named by ‘mantle’ is the same as that which is named by ‘cloak’.⁷⁶⁵ Likewise, [as for] the species which has a name, and a definition [*hadd*] or a description [*rasm*], that which is denoted by the name is the same as that which is denoted by the formula [*qawl*], regardless of whether [the formula] is a definition or a description. [42]

(7) Next, [as for] something characterized by two accidents, if that which is characterized by one of [the two accidents] is that which is characterized by the other, [that thing] is the same and one in number. Likewise, [as for] that which is characterized by a genus and an accident, just as human is characterized as being animal and as being two-footed, that which is characterized by them both is one and the same in number. Likewise, [as for] that which is characterized by a species and an accident, just as Zayd is a human and he is white, that which is characterized by human and that which is characterized by white is one and the same in number.

(8) In general, [as for] anything that is related to two things, whatever kind of relation it may be, that which is related to one of them and that which is related to the other is one and the same in number. Also, [as for] what is not deprived of its quiddity in two relations and [its quiddity] does

Such a mistake can be explained by the fact that we have three sentences with a very similar formulation and it is possible that the eye of a copyist skipped a whole line. If we want to be more conservative in emending, we can emend the “جنس (genus)” at line 12 into “نوع (species).”

⁷⁶³ Reading المسمى بذلك الاسم with the mss. and Martini Bonadeo and her team.

⁷⁶⁴ إزار and رداء translating “*himation*” and “*lōpion*” in Aristotle: see al-Fārābī’s *Book of Dialectics* on *Top.* I.7 (v.3 p.89).

⁷⁶⁵ Reading فمثل الإزار هو بعينه المسمى بالرداء with the mss. and Martini Bonadeo and her team after الإزار والمرداء.

not change⁷⁶⁶ with the change of these two relations, that which is related by one of the two relations and that which is related by the other is one in number. For this reason, the genus which is predicated of two species becomes one in number if that which is predicated of one of the two species and that which is predicated of the other [species] is one and the same, while [these] two species are one in genus on account of the fact that the genus predicated of them is one in number. [43] Likewise, if two individuals are related to their species such that they are said to be one in species [they are said to be one in species⁷⁶⁷] without it being the case that the species is said to be one in species if it is connected to the two individuals.⁷⁶⁸ It is likewise in the case of⁷⁶⁹ anything that subsists [*mā yuqawwimu*]. Likewise, the sun which entered the sign of Libra this year and [the sun] which had entered the sign of Libra the previous year is one in number, whereas the grape which had ripened as the sun entered the sign of Libra in the fall of the previous year [and the grape which ripened this fall] are one in species but not in number. As for the things which come back over the course of a year in a cyclical fashion, they are either one in number, like whatever is in the heavens, or they are one in species, like human individuals, or one in genus, like animal and plant. Contrary things succeeding each other are one in genus with respect to the fact that they are contraries succeeding each other, and the individuals of the contrary things return [*ta 'ūdu*] as one in species. As for something which persists eternally [*yadūmu*], it either persists eternally to be one in number, like the sun and the moon, or it persists eternally to be one in species, like human, or it persists eternally to be one in genus, like animal and plant.

Then, [as for] any pair of things which are said together to be one in species, each of them is [44] on its own one in number; so it is owing to the comparison of what is one in number to another that is one in number and the relation [*iḍāfa*] of one of the two to the other that, in their being taken together in relation to [*bi-l-iḍāfa*] a species or a genus which is one in number, [these two]

⁷⁶⁶ Reading لم يتغير. It makes better sense for al-Fārābī to say that its quiddity does not change rather than that it does not change because, e.g., when the same chunk of silver used to make a crown is melted and an anklet is made out of it, this chunk of silver changes (assumes a new shape), but insofar as we can talk about one and the same chunk of silver, it should still have the same quiddity *qua* (this chunk of) silver. Al-Fārābī makes closely related claims in paragraphs 73, 77, and 89. In paragraph 77, p.88 line 14 (= Martini Bonadeo and her team 72.6) we certainly have بتغير ماهيته. I read the relevant passages in paragraphs 73 and 89 accordingly.

⁷⁶⁷ Assuming that يقال فيهما إنيهما واحد بالنوع fell out due to exact repetition (Mahdi inserts this phrase without the النوع at the end).

⁷⁶⁸ Deleting النوع on Mahdi's suggestion and keeping بالنوع against his suggestion; also, reading أن instead of الذي right after بغير.

⁷⁶⁹ With the mss. and Martini Bonadeo and her team, reading في before كل which is omitted by Mahdi.

are said to be one in species or [in] genus. As for everything that persists eternally as a species [but] not in number, each of what falls under [the species] or characterized by [the species], if taken on its own, is non-perpetual; it is rather corruptible. Whereas if ‘one’ is taken not [in the sense of] one in number but one in species, it would be eternally persistent, for at every single moment there exists something characterized that species.

Chapter III: ‘One’ said of that which is divisible

(A) The Continuous

(9) ‘One’ is also said of that which is continuous by virtue of its being continuous, and its unity is its continuity. The continuous is continuous only by virtue of the fact that its parts terminate at an extremity [*nihāya*] that is one in number and common to them. [45] Therefore, because the extremity of its parts is one, its totality becomes one. This applies to a line, a plane, and a solid body.

(10) A line is either straight or curved. A straight line is said to be one more than a curved line. If the continuous were [defined as] that whose parts terminate at a common extremity, it would follow that two joining [*mutalāqiyān*] lines which are not on a straight [line] [form] one line, and the lines that are joining to each other at the center of a circle and the intersecting lines all [form] one line, but that is unacceptable [*shani*]. For it seems that it is not sufficient for a line to be straight that its parts are just connected at a point that is an extremity common to them, without its being the case that in addition to this it extends from a direction to the opposite of that direction, and there is only a single mutual opposition between the point from which it starts and the point at which it terminates. If that is so, [46] a line is one only if that at which its parts terminate is a single extremity, and these two directions between which the line extends [have] only a single mutual opposition.

(11) As for a circular line, the point from which it starts is [the same as] the point at which it terminates, and the two [points] are not opposed to each other, for its starting point and its end point [*nihāyatuhu*] is one in number, and there is no mutual opposition between that from which it starts and that at which it terminates. Also, a straight line does not have a delimited extremity

in its nature and its quiddity⁷⁷⁰ itself; it stops and comes to an end only by virtue of something other than itself, and that is by virtue of the fact that the quiddity of the body containing this straight line necessarily implies [the line's] termination. As for a circular line, on the other hand, the quiddity of its circularity makes it necessary that in its extension it terminates at that from which it started, and this is necessary with respect to its being a circular line, not with respect to its being a circular line within a body whose substance [*jawhar*] makes its termination necessary. [47]

(12) A continuous thing becomes one only by virtue of the fact that another thing in it is one, and that is by virtue of its being a single extremity, and the direction from which it is extended and the direction to which it is extended are one, and that the mutual opposition [*taqābul*] between the direction it is extended from and the direction it is extended to is a single opposition [*muqābala*]. So a straight [line] is one on account of the unity of something other than itself. It seems that the continuous is one on account of the fact that its parts are⁷⁷¹ delimited by extremities; however, its parts do not have actual extremities at which they terminate, with the extremities being that which divide them and make them multiple and delimit each of its parts. Due to the fact that it is by no means divided into parts by extremities— neither [by extremities] common to all of its parts nor [by extremities] proper to [*khāṣṣa*] each of its parts—it is said to be one⁷⁷² on account of the fact that its parts are not divided by extremities by which some of them [the parts] would actually be separated from others. And the unity of the continuous is the removal [*irtifā'*] of dividing extremities from its parts. You can clearly see [this] all from the heavenly bodies which have⁷⁷³ whatever parts you imagine [to be divided] along with [the extremities] and you divide in your mind by [the extremities] [48] without it being the case that this is in those bodies themselves.⁷⁷⁴ This is why we did not say with regard to two joining lines from different directions that their sum [*majmū'*] is one, since they meet at each other's extremity [and each one has] an actual extremity. The lines that terminate at the center of a circle [drawn] from its circumference are likewise [not said to be one] except for the diameter.

⁷⁷⁰ Reading ماهيته with Martini Bonadeo and her team instead of نهايته in the mss. and Mahdi.

⁷⁷¹ Reading with the mss. and Martini Bonadeo and her team, deleting Mahdi's insertion of غير.

⁷⁷² Reading with the mss. and Martini Bonadeo and her team, deleting Mahdi's insertion of لا.

⁷⁷³ Reading لها instead of the لا in the mss. and Mahdi.

⁷⁷⁴ i.e., these bodies are not divided in themselves, they are conceived as divided only in your imagination.

(B) The Composite

(13) After the continuous, there are bodies composed [*mu'talif*] of several bodies with [dissimilar parts],⁷⁷⁵ or with similar parts,⁷⁷⁶ [such that] some [parts] are not continuous with other [parts], but rather, they are in mutual contact with other [parts] by bonds [*ribāṭāt*] – just as a ship made of wood or a door made of pieces of wood which are not continuous yet in mutual contact by the attachment [*rabṭ*] of some to others or with welding or with glue or through the holes of pegs or by binding or by plugging from outside so that some [parts] would have become inseparable from others and not disjointed. On account of that, [the composite] [49] [was also said] to be one, and the meaning of its unity is the bond by which some [parts] became inseparable from others, that [bond] being natural or artificial.

(14) In addition to that, as for any assembled totality of things, [which is] not a body composed of parts, nor are they [sc. the parts that make up the totality] bodies [themselves], but some of which are linked to others, they are said to be one by virtue of the thing by which they are linked.⁷⁷⁷ For we say ‘one syllogism’ when it is linked to a middle term that is one in number, ‘one premise’ when its parts work together (*yata'āwanu*) to achieve one thing, ‘one speech’ when its parts work together to produce persuasion about something that is one in number, ‘one definition’, ‘one description’, ‘one account’ [*ḥadīth*], ‘one poem’ [*qaṣīda*], ‘one piece of writing’, when its first teller articulates it in a single rhymed way [*alā rawiyy wāḥid*] or in the manner of its parts succeeding one another in a continuous [interval] of time without any interruptions except to breath.

(15) Of [these totalities], [as for] that which is a certain whole which is complete so that no part is lacking of what is needed for the activity of that totality to be better and that [totality] to become more excellent [at performing its activity], it is most properly said to be one. For its unity is due to two things: first, by virtue of the bond by which it is composed, and this is the aim; second, its being a certain whole that is complete. For the perfection and wholeness of something is the unity of whatever belongs to it.

⁷⁷⁵ I agree with Mahdi on this addition. Cf. *KW* 88.

⁷⁷⁶ غير متشابهة الأجزاء and متشابهة الأجزاء, i.e., homoeomerous and anhomoeomerous.

⁷⁷⁷ Reading الذي هي مرتبطة به.

(16) Also, any body circumscribed [*munḥāz*] by its extremity which is proper to it [*takhuṣṣuhu*] was said to be one. [Likewise, any body circumscribed by a certain place is said to be one]. [The latter] is not much different from the former. For a place is the extremity which is outside and fits the body –and this is one of [the senses in which] it is said that he is one person and it is one horse when there is something circumscribed by an extremity proper to it pertaining to it. Therefore, the universe does not have a place, for⁷⁷⁸ there is no concave surface that fits it from outside. This is called ‘one person’ in the sense that he is circumscribed by a certain extremity and a certain place, so he is one in these two respects and in other already presented respects.

It should not [51] occur to you that when a thing is said to be one in many respects, [it is] one of these⁷⁷⁹ [only, and] not in some [other] of these respects.⁷⁸⁰

Chapter IV: ‘One’ said of that which is circumscribed by its quiddity

(17) Also, ‘one’ is said of that which is circumscribed by its quiddity – whatever quiddity it may be, divided or undivided, conceptualized or extramental – and it is that which is circumscribed by whatever share [*qist*] of existence it has and that which is circumscribed by its share of existence. So it is in the nature of ‘one’ in this sense that it is equivalent to [*yusāwiq*] ‘existent’ [*mawjūd*], just like ‘thing’ [*shay*], for there is no difference between saying ‘each thing’ and ‘each one’. Likewise, it is said of all the categories and of this concrete thing [*mushār ilayhi*] and of other things outside the categories [*khārija ‘an al-maqūlāt*] – if indeed there are such things.

(18) ‘One’ is also said of that whose quiddity is not shared [*mushtarak*] so that [if the quiddity were shared], [52] through [the quiddity] there would be a similarity between two things. This may hold of things separable from matter [*mādda*], if [such things] exist [at all]. Of the things that are manifest to us, it also holds of [each concrete thing that is not in a subject] and each concrete thing that is in a subject, as none of them is predicated of that which is more than one. ‘One’ is also said of that which is not divided into any subjects more specific than itself; it is indeed the most specific subject put for a predicate and the division [*qisma*] of all the more general predicates terminates at it and does not go beyond it. Many people are accustomed to call

⁷⁷⁸ Reading ف instead of و.

⁷⁷⁹ Reading منها instead of منا.

⁷⁸⁰ i.e., one should not think that it is one in one of these respects only and is not one in some other respect.

[such things] ‘one in number’, and they are called ‘concrete particulars’ [*al-a’yān*] or ‘individuals’.

(19) And it holds with regard to each concrete thing that is not in a subject, just as Zayd or ‘Amr, that it is said to be one by virtue of the fact that it is circumscribed by a certain quiddity, and one by virtue of the fact that it is circumscribed by an extremity proper to it, and one because it is circumscribed by a place proper to it, and one by virtue of the fact that it is the totality of a body whose parts are linked and conjoined, and one by virtue of the fact that it is a totality whose parts cooperate for achieving the aim for the sake of which it is brought into being. Also, it holds of it that it is one in number when it has two names, and that [53] it is one in number by virtue of having two accidents, and one in number by virtue of being characterized by a species or a genus or an accident. And it holds of it that, when it is compared to something else from its genus, it is one in genus.

(20) And ‘one’ is also said of that which is not quantitatively divided by virtue of its quiddity and in itself (*fī dhātihi*), while it has a position [*waḍ’*] by virtue of which there is a division of what is quantitatively divided. [Such a thing] has no extension at all nor [does it extend] to any direction, just as an end point [*nuḡṭat al-nihāya*] or the point in general, for a point is a certain extremity and it has a position where it exists because on a body [lies] a plane, on which [lies] a line, on which [lies] a point which we take to be the first of the matters [*mawād*] of bodies.

(21) ‘Quantitatively not divided’ –not [in the sense of not divided] by virtue of its quiddity – may be said of anything that is a certain quantity and has certain extension, and of that which is hard to divide like a piece of very hard stone, and of that which [54] cannot be used for the purpose for which it was made when divided [into pieces] like a sword and a servant, and of that which escapes the senses or the instruments to divide it because of its smallness, and of that which is impossible to divide on account of its quiddity [becoming invalid [*tabṭulu*] when it is divided, or because the quiddity] of the substance which is in it does not necessitate that it is divided, like the body of the sun or the moon, or because its division is prohibited by convention and by law, or because it is assumed to be the smallest of small things although there is something in it by which it is possible to make something smaller than itself, and this is why it is [not the smallest but] assumed to be so. Thus, all these are quantitatively divided by virtue of their quiddity but they are said to be quantitatively undivided.

(22) And ‘one’ is also said of that which is not divided by virtue of several accidents, and it is not characterized by several accidents; it is indeed either characterized by no accident at all or if it is characterized, it is characterized by one accident alone.

(23) ‘One’ is also said of that whose quiddity is [not] divided according to [55] the multiplicity of the names and formulae which are said of it nor do the several names and several statements about it denote many features [*ma ‘ānin*], nor do the inflections [*taṣārīf*] of a single expression [*lafẓa*] which is said of it denote many alterations [*taghāyīr kathīra*]. In the manner of what some philosophers say, the intellect [‘*aql*], the intelligent [agent] [‘*āqil*], and the intelligible [object] [*ma ‘qūl*] are one in many things, yet the multiplicity of these inflections [of the root verb ‘*aqala*] does not denote many alterations in it.

(24) ‘One’ is also said of that whose quiddity cannot be denoted by a formula [whereby] each part of [this formula] denotes a part of [the object’s] quiddity, and its quiddity is not divided at all.

(25) ‘One’ is also said of that which has no co-participant [*qasīm*] in the feature [*ma ‘nan*] by which it is characterized – whatever [this] feature may be – by virtue of the fact that that is a quiddity it has as if it were something unique [*munfarid*] in the existence and the quiddity which it has and in which nothing else participates with it.⁷⁸¹ For it is unique in the feature and the quiddity it has either always, or for the most part, or in relation to [*bi-l-idāfa*] a certain thing and at a [certain] time. [56] Examples of the permanent are the universe, the sun, and the moon: the moon is unique in the sense of moonness, [and the moon] has no co-participant from its species [while it has a co-participant] in the sense that it is a planet, [planet] being its genus. Likewise, the sun does not have a co-participant in the sense of sunness which is its species.⁷⁸² Likewise,⁷⁸³ the universe [has no co-participant] in the sense of universeness which is its species. Likewise with that which has no co-participant in something else from the categories which are said of it; it is just as someone unequaled [*munfarid*], say, in philosophy or in grammar or in a skill, in the

⁷⁸¹ Perhaps this passage should be read as follows: فإن <كان> ذلك ماهية له، كان يكون منفردا بالوجود والماهية التي له لا يشركه فيها غيره: “So if this is a quiddity that it has, then it would be unique in the being, i.e., the quiddity which it has and in which nothing else participates with it.”

⁷⁸² After كوكب وهو جنسه ... all three mss. have معنى الشمسية التي هي نوعه; this is omitted by Mahdi but correctly restored by Martini Bonadeo and her team.

⁷⁸³ All three mss. have وكذلك here as opposed to what is reported in the apparatus by Martini Bonadeo and her team. I delete the following في in the mss. with both editors.

manner of what is said about Aristotle that he has no equal [*qasīm*] in philosophy or by virtue of a skill in [philosophy], for he is, as it were,⁷⁸⁴ said to be [the] one [and only] in [philosophy]. As for that which is [unique] in relation to [*bi-l-iḏāfa*] a certain thing and at a certain time, it is like someone's saying 'I have a coin in my hand', for the coin is something unique in the sense it has in relation to [*bi-l-iḏāfa*] that time and to that person.

(26) You ought to know that [regarding] all that exists and all that is a thing it follows necessarily that it has no co-participant in something [by] which it is characterized: either in something by which it is what it is [*mā huwa*], or in [57] something by which it is how [*kayfa*] [it is] or how much [*kam*] [it is], or something else by which it is characterized. For if everything had a co-participant in everything by which it is characterized, nothing could ever be differentiated [*yatamayyaz*] from another due to anything at all [*wa-lā li-shay'*],⁷⁸⁵ and no existent could ever be differentiated from another existent, and it all would come down to the following: the feature of the existent would have no co-participant,⁷⁸⁶ and it would indeed be invalid [*yabṭulu*] that it has a name and a named, and conversation [*munāṭaqa*] and expressing oneself [*ibāra*] would be invalid, too. In this respect, it is equivalent to [*musāwīq*] that which is circumscribed by a certain quiddity, for it is circumscribed only by that in which it has no co-participant.

Part II – The ways in which things are said to be many

Chapter V: The many which is the opposite of what is one

(A) That which is said to be one of which no many is the opposite

(27) That which is not one is the opposite of what is one. [58] 'One' is denied in as many ways as 'one' is affirmed. Yet, in that 'one' is denied, what has the same force as multiplicity is opposed to the one, while it is not true that the opposite of each of what is said to be one is a certain many. Among these is the 'one' said of what is circumscribed [*munḥāz*] by a certain quiddity, for the taking-away of the one from it indicates [*yadullu*] the taking-away of the quiddity it has. Then, if

⁷⁸⁴ Reading كان with Martini Bonadeo and her team against Mahdi's كان.

⁷⁸⁵ For the emphatic use of ولا after a negation as in here, see Wright v.2 160 rem.b (W. Wright, *A Grammar of the Arabic Language*, 3rd ed., 2 vols. (Beirut: Librairie du Liban, 1974)).

⁷⁸⁶ Perhaps we should read قسم في instead of له, meaning: "there would not be any co-participants in the feature of the existent."

someone claims “the taking-away of the one [from it] indicates the taking away of that by which it is circumscribed, and if that by which it is circumscribed from other things is taken away, then it has a specific or generic quiddity which something else shares with it,” the answer to this [claim] would be that that is also a quiddity by which it is circumscribed from what does not have that quiddity, even if that is the most general genus. For ‘one’ is said of that which is circumscribed by a quiddity, be it general or specific. Then, the taking-away of the one here is the taking-away of the quiddity of that of which ‘one’ is said, [without] its opposite [being affirmed], for it is not possible to give an account of something which has the opposite of this one.⁷⁸⁷

[59] (28) Also, [as for] the ‘one’ said of a body circumscribed by a certain extremity, the taking-away of [the one] is the taking-away of [the body’s] circumscription by a certain extremity. And, if the body’s circumscription from another [body] by a certain extremity is removed from [this] body, then it becomes continuous with the other [body]. In this way, if the extremity proper to it is removed from it, then its extremity becomes something common to both [that body] and another [body], also it becomes continuous with [the other body]. Its continuity with [the other body] does not make it many in itself [*fī nafsīhi*]; rather, the totality comprising it and the other one is made to be one with respect to the fact that the totality [comprising] its [continuous] parts is a continuous one.

(29) Likewise, that which has no co-participant in what it is characterized by is opposed to that which has a co-participant in what it is characterized by. And that which has a co-participant is not many in itself [*fī dhātīhi*] insofar as it has a co-participant, but the many arises [*yahduthu*] only by virtue of it and its co-participant [together]. [60]

(B) That which is said to be one and to which a certain many is opposed

⁷⁸⁷ Reading أن يكون قول ما له. Mss. A and B have قولها له (and C has قولهما له); Mahdi emends this into قولها له and Martini Bonadeo and her team emend this into قوله له. Mahdi reports that the mss. have قولها له and he emends it into قولها له.

(30) As for the ‘one’ said of that whose quiddity is undivided, the opposite of it is that whose quiddity is divided, which is many. For either that which is divided [*al-munqasam*] has already been divided or it is divisible. [And,] each one of them is many either actually or potentially.

(31) Likewise, [as for] the ‘one’ said of that which is not divided according to the inflections of the expressions denoting it, what is opposed to it is also a certain many, which is divided according to the inflections of the expressions denoting it.

(32) Likewise, the one which is not divided by virtue of several accidents is the opposite of that which is divided by virtue of several accidents, which is a certain many.

(33) Likewise, [as for] the ‘one’ said of what has a position and is not quantitatively divisible, that which is divisible is opposed to it, just as a continuous quantity, a continuous body, [and a body] [61] whose parts are linked to each other.

(34) Likewise, of that which has a certain extension, [as for] what is said to be undivided in the ways proper to it, the opposite of each one of them is that which is divided, and each one of them is divided in a certain way, [namely,] in the way in which it is said to be many. Therefore, that whose parts have delimited extremities or extremities proper to them is opposed to the continuous; so [the former] is many in this respect. And that whose parts do not have a link at all is opposed to that whose parts have a link; likewise, [the former] is many in this respect.

(35) The many in number is opposed to the one in number. For that which has many names is opposed to⁷⁸⁸ [many] things whose names are distinct. [As for] what is one in number, on account of [the fact that]⁷⁸⁹ that which is named with one name is not the one in number, but rather that which is named by the first name and that which is denoted by the definition is one⁷⁹⁰ [in number], the opposite of it [sc., what is one in number] is the many [comprising two things such that] that which is related to one of the two is different from that which is related to the other.⁷⁹¹

⁷⁸⁸ Reading *تقابل* with Martini Bonadeo and her team.

⁷⁸⁹ Adding *أن* after *لأجل*.

⁷⁹⁰ Reading *واحد* with MS. A and Martini Bonadeo and her team.

⁷⁹¹ Apart from the differences mentioned in the previous three footnotes, I translate the Arabic text printed in Mahdi which accounts for what we find in the mss. to a greater extent than the text printed by Martini Bonadeo and her team.

(36) The many in species is opposed to the one in species, and it is that each one of which is under a highest genus proper to itself [*khāṣṣ bihi*]. [Some] many is the opposite of each one of these classes of the one.

Chapter VI: The many arising from the one

(A) The many arising from the one of which it accidentally holds that it is the same as the many which is the opposite of that very one

(37) However, it accidentally holds [*yalḥaqu*] that the many which is the opposite of some of these classes [of the one] is the same as⁷⁹² the many arising from [*ḥādith 'an*] that class [of the one]. Among these is the many arising from the one in genus. For if the species under each of the ten genera are taken, due to the fact that the species of each genus are one in that genus, [the many] produced from [*muḥdath min*] these ones [63] is a many [produced from the one in genus]. For if a species [from] any genus is taken and compared to a species from another genus and to a third species from a third genus, the three species would be many in genus. Likewise, if two or more species are taken from any genus and compared to two or more species from another genus, the former [group] and the latter [group] would be many in genus, while each pair of species under a genus are one in genus. Then, it is happens accidentally [*ya 'riḍu*] that the many⁷⁹³ arising from both of them is [a many arising from what is] one in genus, while this is also accidentally a many which is the opposite of what is one in genus. [This identity is accidental because] it is also clear that these two genera⁷⁹⁴ are distinct, and if a species from any genus is compared with a species from another genus, the many [arising from them] would be the opposite of the one in genus, while the ones of this many are not ones in genus.

(38) Also, this very same thing holds of the many arising from what is [64] one in species. For if we take, say, two individuals from a species, two individuals from another species, and two individuals from a third species, each pair of individuals are one in species, and the many arising from these three [groups of] ones is a many arising from the one in species. However, if we compare a pair of [individuals] from a species to [another] pair from another species, their sum

⁷⁹² The mss. have من which might also make sense. Compare with *KW* 39, p.65 line 1.

⁷⁹³ Deleting الواحد on Mahdi's suggestion.

⁷⁹⁴ Keeping الجنس with the mss. and Martini Bonadeo and her team against Mahdi.

[*majmū*] would also be many in species which is the opposite of what is one in species. And it is clear that this holds accidentally, not *per se*. In contrast [with the previous example], if we take an individual from each species, the many arising [from these individuals] is the opposite of the one in species while [this] many does not arise from what is one in species.

(39) This also holds of the many arising from the one in number. For [regarding] the many each one of whose ones is an entity [*amr*] with two names, let it be three entities each one [of which] has two names such that the first [entity] named by two names is different from the second [entity] named [by two names] and also different from [the third [entity] named [by two names]], then the many arising from these three, each one [65] of which is [one] in number, is the same as the many arising [from] ones which are distinct in meaning and in name. However, this [identity] holds only accidentally on account of the fact that if we take each one of these three to be named by a name, and if I compare⁷⁹⁵ them, their sum would be many in number while not even one of them⁷⁹⁶ is one in number. In this manner are the rest of that of which ‘one in number’ is said.

(B) The many arising from the one which is also the many which is the opposite of that very one

(40) The many arising from a collection [*jamā’a*] of continuous things is also the many which is the opposite of the continuous.

(41) Likewise, [as for] the many arising from the ones each one of which is [one] by virtue of the fact that it is a certain totality, there is no link between [the members of] a collection of totalities; thus, this is the many which is the opposite of the totality. [66]

(C) The many arising from the one which is not the many which is the opposite of that very one

(42) As for the many arising from what is not quantitatively divided while having a position, it is not itself the many which is the opposite of that which is not quantitatively divided while having

⁷⁹⁵ Perhaps it should be قايست instead of قايستا. If this emendation is adopted, the phrase reads “... if we compare them...”

⁷⁹⁶ Reading without هو with MS. A and Martini Bonadeo and her team against Mahdi. Keeping the following و with the mss. and Mahdi against Martini Bonadeo and her team. As I also cited above in Footnote n.785 above for the emphatic use of ولا after a negation as in here, see Wright v.2 160 rem.b.

a position, except in the view of those who produce magnitudes from points. For from a collection of points the opposite of the one from which this many has arisen does not arise. [And it is likewise with the many arising from what is not divided into subjects more specific than itself]⁷⁹⁷ for its opposite is that which is divided into subjects more specific than itself, and the collection comprising ones which are in such a state is in no way a universal entity divided into subjects more specific than itself. For either the opposite of this one is never many, or the universal is many by virtue of its subjects into which it can be divided, or it is many because it has the same force as multiplicity, since when we intellectually grasp it [*'aqlnāhu*], we would have intellectually grasped many things or we would have brought together many things under it. Yet even if someone posits that the thing to which it is opposed is many in a [certain] way, the collection of its ones is not a universal at all.⁷⁹⁸

And⁷⁹⁹ it sometimes also holds of the many arising from that which is not divided while having a certain extension that it is opposed to the one from which it has arisen. [67]

(43) As for the many arising from what is not divided by virtue of the several accidents by which it is characterized, the many here arising from what is not divided is other than the many which is the opposite of it.

(44) Likewise, the many arising from what is not divided by virtue of a multiplicity of the expressions denoting it, nor by virtue of a multiplicity of [their] inflections, is in no way many by virtue of the fact that it is a thing divided by virtue of a multiplicity of the expressions denoting it, nor is it [many by virtue of being] divided according to the inflections of these expressions. Thus, the many here arising from it is other than the many which is the opposite of it.

⁷⁹⁷ The transition from what is not quantitatively divided into what is not divided into more specific subjects is too abrupt. For this reason, I presume that something like this fell off: *وكذلك الكثير الحادث عما لا ينقسم إلى موضوع أخص منه*. With this addition, the following sentences also make better sense. See next footnote for what I take to be al-Fārābī's point here.

⁷⁹⁸ It seems that al-Fārābī's point here is that even if we produce a collection of e.g. Zayd and 'Amr, each of which is one in the sense that it is not divided into more specific subjects, this collection is short of a universal (it is not humanity, and it would probably not be humanity even if it included all the *actual* humans), and not being a universal, it is not divided into more specific subjects, because a collection is not said of its members.

⁷⁹⁹ Reading *و* instead of *ف* in the mss. Here, al-Fārābī seems to move from what is not divided into more specific subjects into what is assumed to be not quantitatively divided even though it has an extension (i.e., even though it is actually quantitatively divided), e.g., a hard stone which is said to be not quantitatively divided because it is difficult to divide it.

(45) As for the many arising from that whose quiddity is not divided, if that is a many for which it is possible that some of that whose quiddity is not divided are qualified [*yuqayyadu*] by others with a formula, then, the many arising from it would be⁸⁰⁰ that very thing which is the opposite of it because the thing which is the opposite of it is that whose quiddity is divided. But if it is not the case that⁸⁰¹ some of them are qualified by others, it is not possible at all [68] that it is one⁸⁰² [thing] arising from [that whose quiddity is not divided] and is opposed [to that whose quiddity is not divided].

(46) [As for] the many arising from the one by virtue of the fact that it has no co-participant in what it is characterized by, if a thing which has no co-participant is combined [*jumi'a*] with another which has [no] co-participant, then neither of the two has a co-participant in the species it is characterized by; even if the two are under two genera, and then one of them is compared to the other, it does not come about [*yaḥduthu*] from the comparison of one of them to the other that each one of them has a co-participant in its species; therefore, [with regard to] the many arising from [this one], that which is [its] opposite does not come about at all. Likewise, if [something] has no co-participant in its genus and is related to another which also has no co-participant in its genus, it does [not]⁸⁰³ come about that each one of them comes to have a co-participant in its genus. Therefore, with regard to the many arising from the one in this sense, the opposite of this one does not come about.

(47) The many arising from what is circumscribed by a certain extremity is a collection [69] of the components [*aqsām*] each one of which is circumscribed by a [certain] extremity. So if these extremities were common, the totality of [the component bodies] would be a continuous body⁸⁰⁴ whose parts are delimited by common extremities. If [the totality of the component bodies] are not continuous at all, their circumscription by extremities is not removed⁸⁰⁵ at all, [but if their

⁸⁰⁰ Not reading ليس with the mss. against both editions.

⁸⁰¹ Reading فإذا instead of وإن ما.

⁸⁰² Reading واحدا with the mss.

⁸⁰³ Adding ما with Martini Bonadeo and her team instead of Mahdi's addition of لما.

⁸⁰⁴ Reading just جسمًا with MS. A against both editions.

⁸⁰⁵ Reading ما ارتفع instead of وارتفع in the mss. Both editions print ارتفع.

circumscription by extremities is removed],⁸⁰⁶ then the parts of [this totality]⁸⁰⁷ would be delimited by common extremities. Yet, this would mean the removal of their multiplicity⁸⁰⁸ which is other than⁸⁰⁹ something that is the opposite of the one in this sense.

(48) The many arising from what is circumscribed [by a place proper to it is a collection of bodies circumscribed] by places, [whereby] each one of [the bodies] is distinguished [yukhaṣṣu]⁸¹⁰ by a place proper to it. For if [its component bodies' circumscription by places] is removed, it becomes, as a whole, either [something] continuous with its parts being delimited by common extremities, then it becomes many in a way other than the many arising from it, or it becomes continuous without its parts being delimited by extremities proper to them, [70] then, its multiplicity is removed and it becomes one by virtue of continuity. If it becomes many with respect to the fact that itself or its species can be divided, [it is] a many other than the many arising from it. Therefore, the many arising from it involves nothing that is the opposite of the sense of the one [in] which it is said [to be] one.

(49) As for the many arising from what is circumscribed by a [certain] quiddity, it cannot be uncircumscribed by a quiddity, and it involves merely the invalidation [ibṭāl] of the quiddity of that very thing [from which] the many has arisen, [while it] is circumscribed by a quiddity. For if someone claims that each one [of the ones] of the arising many is circumscribed by a certain quiddity, [we say in response that] the many involves the taking-away of a quiddity which is not the quiddity by which [this many] is circumscribed, but only a quiddity of something else is taken away from it, and in virtue of that [fact], [this many] became one. For the many arising from it involves nothing but the acquisition [taḥṣīl] of its own quiddity by virtue of which it is said to be one. Therefore, the many arising from it does not involve any thing that is the opposite of the sense in which it is said to be one. [Regarding] this sense of one, it is far from being the case that the many arising from it involves a contrariety [muḍādda]; rather, there is no many here

⁸⁰⁶ Adding وإن ارتفع انحبازها بنهايات, as demanded by the sense of the following passage, assuming that this fell out due to near repetition.

⁸⁰⁷ Reading فأجزاؤها. MS. A has أجزاؤها, and MS. C وأجزائها; it is hard to make out what comes before أجزائها in MS. C:



ومن أجزائها:

⁸⁰⁸ Not adopting Mahdi's addition of فإذن ليس الكثير الحادث.

⁸⁰⁹ Reading غير instead of the عند in the mss.

⁸¹⁰ Reading يخص with the mss.

[71] which is the opposite of it, while it is the case that it is said with regard to each of its⁸¹¹ classes that it is one.

Chapter VII: The subject of the ‘one’ said of the many

(A) That which needs to be many in order for ‘one’ to apply to it

(50) The subject of the ‘one’ said of the many is necessarily many, for ‘one’ does not apply to it if it is not many. The more basic [kinds] [*awwal*] of this are what is one in genus, or one in species, or one by virtue of the formula denoting it; [in each case] its predicate is one in number while it is many, and the minimum of this is two. [It is] likewise with that whose matter is [one], for it is a many of which it is said that it is one in matter; [it is] likewise with the rest of what is [one] in subject.

(51) As for the one in number, it is related either to two names, or to a name and a formula, or to two predicates. Either it is many on account of the multiplicity of its relation to several things among names or predicates, or [such] several things are inseparable [*ghayr mufāriqa*] from it. So this [72] thing which is one is either necessarily many or necessarily associated [*maqrūn*] with many [things], and ‘one’ applies to it only on account of the fact that it is many or that it is necessarily associated with many [things]; otherwise, ‘one in number’ does not apply to it.

(52) [As for] the ‘one’ said of the continuous in respect of its being continuous, the continuous is many either in respect of its parts’ being delimited by common extremities, or on account of the fact that it is or its species is divisible into parts united by their common or distinct [*mutabāyina*] extremities, or that it has parts not delimited by extremities in case it is extended from a direction or directions to a direction or directions.

(53) [As for] the ‘one’ said of the bodies that are linked by bonds, ‘one’ is said of it only with its being by necessity many, since [the component bodies’] extremities differ, and each one of [the bodies] is circumscribed by an extremity proper to it, and its collection is the collection of ones, each one of which is circumscribed by some extremities; still, they are actually divided into parts delimited by extremities. [73]

⁸¹¹ Adding له after أصنافا.

(54) Likewise, [as for] the ‘one’ said of a collection of formulae or a collection of intelligibles, just as one premise, one syllogism, one speech, and one poem,⁸¹² ‘one’ is said of each of these, while it is many. For these need to be many in order for ‘one’ to apply to them.

(B) That which does not need to be many in order for ‘one’ to apply to it

(55) [As for the rest of that of which ‘one’ is said, it does not need to be many in order for ‘one’ to apply to it.] It happens only with regard to some of it that it is many, just as Zayd or ‘Amr; as this is a body containing some bodies, the collection [*mujtami*] of which becomes a certain totality [*jumla*]. This continuous [body], this line, and this plane are like this. Otherwise, nothing from the remaining categories is many or a certain totality.

(56) None of that which is not divided, like a point, is ever many.

[74] (57) [As for] that which is not divided but has extension, this [i.e., being many] happens by some accident in their case⁸¹³ without their needing to be many in order for ‘one’ to apply to them.

(58) Likewise, that which is not divided into several accidents involves no excess of multiplicity, although there is certainly one thing or other in it which has a little bit of multiplicity [*fthi shay*’ *fa-shay*’ *yasir min al-kathra*].

(59) As for that which is not divided by virtue of the multiplicity of the inflections of an expression denoting it, it is not the case at all that it must contain any multiplicity.

(60) It is likewise with that whose quiddity is not divided.

(C) That which may or may not be many

(61) As for something circumscribed by a quiddity, it is sometimes many, and sometimes not many.

⁸¹² The text mentions two different kinds of poems, القصيدة الطويلة.

⁸¹³ Reading فيها. As noted in the apparatus by Martini Bonadeo and her team, the mss. have منها.

Part III – ‘Many’ and ‘One’

Chapter VIII: The classes of the one and the classes of the many opposed to them

[75] (62) So the many which is the subject of the one, and the many which is the opposite of the one, and the many which arises from the one have now been addressed. It is not possible that the many which is the subject of the one is the opposite of the one by which it is characterized, because nothing is characterized by its contrary [*didd*] save accidentally. Also, it is not possible that the many arising from the one is a part belonging to a many which is contrary [*muḏādd*] to [that] one, because nothing arises from its contrary save accidentally, for it is a part of that by which it subsists [*qiwāmuḥu*]. However, each many is out of [*min*] a collection of ones, and the part of each many by which it subsists is the one, and each many [arises] from the one in that way. Therefore, [as for] the many which is contrary to [76] the one, [each one] of its ones is different from the one which is the contrary of it; rather, it is another one different from this one. Likewise, [as for] the many whose totality is characterized by ‘one’, each of one of its ones is one which is other than [the one] said of its totality. Let us consider by observing, one by one, each class of the one, and, one by one, each class of the many which is the opposite of each class of the one so that which class of [the many] arises from which class of the one is known.

(63) Then, [as for] the one in genus, the one in species, the one by virtue of the formula denoting its quiddity, the one by virtue of a single or multiple accidents, the one by virtue of being related [*tanāsub*], and the one with regard to the fact that an aim which is one in number or in species is achieved by it, [these all] agree [*tajtami ‘u*] in that several things are one by virtue of the predicate which is one in number. [The cases of] the one [with regard to the fact that their subject is one in number or their matter is one] in species or in number⁸¹⁴ agree in that several things are one by virtue of the subject which is one in number. A continuous straight line [*al-muttaṣil ‘alā istiḳāma*] is one by virtue of its parts terminating at an extremity which is one in number and because the contrariety [*taḏādd*] between the direction from which it extends [77] and the [direction] to which it extends is one in number. The totality whose parts are in mutual contact is one by virtue of the fact that the bond [*ribāṭ*] which binds them is one in number. As for the one

⁸¹⁴ The context demands us to read something like بالعدد أو بالنوع أو بالعدد واحد [عنصرها واحد] بالعدد أو بالنوع أو بالعدد واحد. This omission can be explained as a mistake due to homoioteleuton.

totality which is said to be one on account of an aim which is one in number, it is also one because the aim of [the ones of the totality] is one in number. Then, these all are one on account of the fact that they are then related to the one in number, which is the cause [*sabab*] for their being one. [As for] the multiplicity which is the opposite of the one in number which is one of these at some time, [the multiplicity in number]⁸¹⁵ is the cause for the multiplicity which is the opposite of each of these that is one. For the one in number is the cause for the fact that these all become one.

(64) [As for] that which is circumscribed by a certain extremity, that which is circumscribed by a certain place, and that which is circumscribed by a certain quiddity, these three are similar, and indeed none of them was said to be one on account of the fact that they have a relation to the one in number which would be the cause for all of them to become one. And that which is circumscribed by a certain extremity and that which is circumscribed by a certain place cannot be other than a body, [78] while that which is circumscribed by a certain quiddity may or may not be a body; indeed, it is general just like ‘thing’ and ‘existent’. That which is circumscribed by a certain extremity and that which is in a place has a certain quiddity, and a body has a certain quiddity, and its extremity by which it is circumscribed has a [certain] quiddity, and each one of them is one with respect to the fact that it has a certain quiddity. However, because its circumscription is by its extremity and the extremity of the body which has the extremity, it is not said to be one on account of its circumscription by a [certain] quiddity. [As for] that whose quiddity is not shared so that [if the quiddity were shared], through [the quiddity] there would be a similarity between two things, it is also circumscribed by a certain quiddity, and its unity is nothing but on account of its circumscription by its essence [*bi-dhātihi*], so its division [from the other, i.e., the differentiation of the case with not-shared quiddity from the case with shared predicate]⁸¹⁶ is by the fact that it is more complete in terms of circumscription and more perfect [*atqan*]⁸¹⁷ in terms of fulfilling its function [*adā’an*] than a shared predicate. For the feature [*ma’nā*] of the human without a qualification [*alā al-īlāq*] is circumscribed and separated from

⁸¹⁵ Reading *فهي* with Martini Bonadeo and her team, assuming that this refers back to the multiplicity which is the opposite of the one in number. Al-Fārābī seems to express here the idea that, e.g., the cause of the unity of the one in species is the one in number, and its opposite is also the cause of the opposite, i.e., the cause of the multiplicity of the many in species is the many in number.

⁸¹⁶ The mss. and both editors have *فيقسمه*; the sense should be as indicated in the translation. It seems to me that *تقسيمه* would convey this sense better.

⁸¹⁷ Reading *أبقى* with Martini Bonadeo and her team instead of Mahdi’s *أبقى*.

that which is not human like the horse and so on, and this human is circumscribed from that human with a more perfect circumscription than the circumscription of the human from the horse, and the human is more perfect in terms of circumscription than [79] the animal; likewise, each species is more perfect in terms of circumscription than its genus.

(65) [[As for] the senses in which ‘one’ is said for a line], these do not differ by virtue of the fact that some surpass others by being straight [in addition] [*illā bi-tafāḍul istiḳāma*⁸¹⁸]: if it is one by virtue of the removal of the extremities of its parts, its opposite is the many whose parts have actual extremities some of which are proximate to [*yaqrubu*] others. If it is one by virtue of the fact that an extremity which is one in number is common to its two parts, its opposite is such that any one of its two parts happens to have an extremity which is different from the extremity of the other part, then it becomes many by virtue of the multiplicity of [its] extremity. If that is [one] by virtue of the fact that its direction has a single contrariety [*taḍādd*], its multiplicity is [due to its direction’s having] two or more contraries. Then, if this is the case, each part [*juz*] of the many contraries, the many directions, and the many extremities is one in a sense other than the senses in which ‘one’ is said for the continuous straight [line]. Likewise, the opposite of the circular line is that which extends from a direction and arrives at another direction or several directions which are [80] the cause for the multiplicity of those [things] which have the [several] directions, and each part of them is one in a sense other than the senses in which [‘one’] is said [for the circular line].

Chapter IX: The many arising from each class of the one which is different from the many arising from another class [of the one]

(66) The many is a totality of ones. ‘Many’ is said of something in as many ways as ‘one’ is said of something. The many arising from any class of the one is different from the many arising from another class [of the one]. So the many arising from the one which is one in predicate is different from the many arising from the one which is one in subject, for [the many] arising from that which is one in predicate is such that each one of its ones is one in predicate, just as in the case of the many arising from the ones each one [of which] is one in genus. For if the number of the

⁸¹⁸ Reading استقامة with the mss. against Mahdi’s استقامته.

ones of this many is ten, each one of the ten is one in genus. The one in the first genus, for example, is all of what is under the category of quantity, the one in the second genus [81] is all of what is under the category of quality, and [if this goes on] until all the categories are covered in this manner, then, what is under the ten categories are the ones which are from the one in genus, and the many from [the one in genus] is the many which is from these ones. In this manner, the many which is from the one in species is such that each one of its ones is one in species. For the individuals of each species of the [category of] substance are taken, and then these are ones arising from the one in species; [it is] likewise [when] individuals of each species of [any of] the remaining categories are taken.

(67) The many arising from the one in subject is that each of whose ones is⁸¹⁹ a class of the one in subject, just as in the case that bodies whose matter is one and other bodies whose matter is also one are taken, and then there are, say, three ones each of which is one in matter. [It is] likewise with the rest of that of which 'one in subject' is said.

(68) The many arising from the one in number is that each of whose ones is a class of the one in number, just as in the case that a [certain] species [with] several names [and another species with several names [82], and a third [species] with several names] are taken, and then a many results from [these] three ones each one [of which is one] in number. [It is] likewise with the rest of what is said to be one [in number]. In general, if an entity related to two things and [another] entity related to two things, and a third [entity] related to two things are taken, a many would result from [these] three ones each one of which is one in number.

(69) The many arising from the one due to its being a totality is that each one of whose ones is one due to its being a totality, just as in the case that a certain totality is a body, another totality is also a body, and a third totality is also a body, and then this many arises from [these] three ones each of which is one due to its being a totality of a body. Likewise, each class of the one due to its being a totality [is as discussed above], like three premises, or three syllogisms, or three speeches, or three poems.⁸²⁰

(70) In [this] manner is the many arising out of [*min*] each class of the one which is said of what is not divided, like [the many] arising [83] from points, or the [many] arising from magnitudes

⁸¹⁹ Omitting هو صنف before.

⁸²⁰ قصائد.

not divided in one of these ways,⁸²¹ or the [many] arising from ones each one [of which] is not divided into what is more specific than itself, like Zayd, ‘Amr, and Khālīd, or [the many arising] from ones each one of which has an undivided quiddity, or [the many arising] from ones each one of which is not divided according to the multiplicity of the names and the formulae and the inflections denoting it, or [the many arising] from ones each one of which does not have a co-participant in what is predicated of it, like the sun and the moon, or [the many arising from ones each one of which is] that [whose quiddity] is proper to it [*khāṣṣa bihi*].

(71) [It is likewise with the many arising from ones each one of which is circumscribed by a certain extremity], and the [many] arising from ones each one of which is circumscribed by a certain place, [with these ones being] either positioned close together or far apart, and [the many] arising from ones each one of which is circumscribed by a certain quiddity like substance, quantity, quality, human, horse, ox,⁸²² knowledge, ignorance, black, white etc.; of the senses of the one, this [last] sense is, as I believe, the one which [84] Parmenides had in mind in his statement that that which exists is one.

Part IV – ‘One’ and ‘Many’

Chapter X: ‘One’ with respect to the fact that it is a part of a certain many

(72) It is evident that a certain many is opposed to each sense of the one.⁸²³ Among these is the one in genus to which the many in genus is opposed. For if two things are one by virtue of the fact that the genus predicated of them is one in number, the many which is the opposite of that one is two things of which two genera are predicated. Likewise, if more than two things are one by virtue of the fact that their predicate is a genus which is one in number, the many it is opposed to is [several] things under several highest genera.

⁸²¹ I.e., the ways in which something which is quantitatively divided according to its quiddity is assumed to be undivided, such as a piece of hard stone which is in fact quantitatively divided but is assumed to be undivided. These ways are detailed in paragraphs 21 and 79.

⁸²² Reading النور with Martini Bonadeo and her team instead of the نور in the mss. and Mahdi. Also not keeping Mahdi’s addition of الظلمة right after it.

⁸²³ This universal claim cannot represent Farabi’s considered opinion without a qualification because, as he argues in paragraphs 27-9, there is no multiplicity which is the opposite of some senses of unity, for example, the sense of unity *qua* circumscribed by a quiddity.

[84] (73) It is clear that each one of the highest genera is said to be one, not in the sense in which two things are said to be one in genus, nor is it [said to be] one in number if the one in number means that it is related to many things unless it means that⁸²⁴ its quiddity remains the same [*tata 'ayyanu*]⁸²⁵ as it is related to each one of [these things] one by one. Also, a genus is not one in number in view of its being one of a many, although it holds of [each genus] that it is one in number in another respect. We should rather consider in which respect each of [these] genera becomes one so that it becomes one and a part of a many.

(74) As for several things which are said to be one by virtue of the fact that their predicate is one in number, they are said to be many only in that respect in which they are opposed to the one which is said of them by virtue of the fact that they are many by virtue of the multiplicity of their predicates in number. Then, [as for] those which are one by virtue of the fact that the species predicated of them is one in number, the opposite of [the one in this sense] is only the many whose species are many by virtue of the fact that each thing [which make up the many] is under each species, and [86] all these species are under one genus. For if they are under [several] highest genera, this previous multiplicity is not by virtue of the multiplicity of their species but rather by virtue of the multiplicity of their genera, and [in this case] this many would have been the opposite of the one in genus.

(75) [As for] those which are one by virtue of the formula denoting them, they are many only by virtue of the fact that their quiddities are many. [As for] those which are one by virtue of the fact that the accident predicated of them is one, the opposite of [the one in this sense] is the multiplicity which is many accidents, [and] it is evident that if they become many, they are many only by virtue of the multiplicity of their predicates. For when their predicates are distinct, they are [also] distinct and their predicates are distinct; then, each one of them is [one] of a many, and likewise, each one of their predicates is one of a many (but⁸²⁶ I can only wish to know [*layta shi 'rī*] in which sense of the one it is said of each one of them that it is one with respect to the fact that it is a part of a many). Likewise, [as for] those which are said to be one by virtue of the fact that their matter is one, the many whose matters are many is opposed to [the one in this

⁸²⁴ Reading *لأنه* (followed by Martini Bondaio and her team as *لأنه*); Mahdi prints *لأنه*.

⁸²⁵ If the fifth form verb *تعين* cannot mean “remaining the same,” we should read it as *تتغير* and add a negation before it, meaning “its quiddity does not change.” See the footnote to the parallel claim in paragraph 8 above.

⁸²⁶ Reading *و* against the *ف* in both editions.

sense], and in general, its subjects are many; [87] in view of its being a part of a many, the case of [*hāl fī*] one and of each one of their subjects is like the case of those which are many by virtue of the multiplicity of [their] predicates.

(76) It is clear that [as for] each of these of which ‘one’ is said with respect to the fact that it is a part of a many, ‘one’ is not said of it in the respect in which ‘one’ is said of the one which is the opposite of this many of which this one is a part. For the one in genus is not a part of the many in genus so that if the one in genus is reiterated [*takarrara*], the many in genus would result from it, although that sometimes holds of it when it is imagined. Yet, if it is reiterated, nothing but several highest genera result from it such that each one of [these highest genera] have several species under it, for from this several ones [*āḥād kathīra*] result, some of which are genera, and the others are [things] under each of [the genera]. Likewise, the many in number is opposed to what is one in number. Among [what is many in number] are [things with] many names and their meanings are many, [and the case in which] a name and a formula denote two things. [88] [Another sort of what is many in number can be found in] the case where that of which a genus or a species is predicated and that of which an accident is predicated are not one, rather, they are two or many so that the genus or the species is predicated of a thing and the accident is predicated of another [thing]. [It is likewise in] the case in which that of which one of two accidents is predicated and that of which the other accident is predicated are not one but many. If it is like this, the one which is a part of the many [which is] out of [*min*] each one of them is not the one which is [one] in number, except that if it is reiterated, it then becomes a part of a many.

Chapter XI: ‘One’ not with respect to the fact that it is a part of a certain many

(77) However, [as for] a number of [things] to which the one in number is related⁸²⁷ and the ones of the thing which is one in number, each one of them is said to be one by no means due to the fact that it is one in one of [the aforementioned] ways: neither by virtue of the fact that their predicate is one, nor by virtue of the fact that their subject is one, nor by virtue of the fact that it is related to two things [such that] its quiddity does not change with the imposition [*ta’yīn*] of the two relations on it. For it is said to be one like what is circumscribed by a certain place [89] from

⁸²⁷ عدد ما إليه يُنسب الواحد بالعدد.

other things, for each one of them is one and the sense of its unity is its separation by a certain place. So, what is one [*al-wāḥid*] here means what is separated by a certain thing with the exclusion of other things [*dūna ghayrihi*].

(78) That which is circumscribed by a [certain] quiddity is most properly said to be one, next [comes what is circumscribed] by each thing⁸²⁸ from the remaining categories. [As for] that which is separated from other things by a certain quiddity, like human, it is separated by a quiddity proper to it with the exclusion of horse and with the exclusion of all that is its co-participant in animal; horse is separated by another quiddity which is proper to it, and donkey is separated by a quiddity proper to it. Each of these species is one if it is separated by a certain quiddity which is proper to it, and its unity is the differentia by which it is differentiated and circumscribed from all that is other than itself. It is likewise with that which is circumscribed by the knowledge of grammar [*al-naḥw*]⁸²⁹ from that which is circumscribed by the capacity of writing [*al-kitāba*]. Likewise, that which is circumscribed and separated by a certain place among the places with the exclusion of other things is one by virtue of that place. It is likewise with each of that which is separated by something it has with the exclusion of other things, and if something else different from it within its species is also [separated] by a certain thing, each of [these] two is one since it marks it out from it [*ḥāzahu minhu*] and it is separated by it.⁸³⁰

[90] (79) [As for] what is asserted to be one by virtue of the fact that it is not divided into a subject more specific than itself, and that which is said to be quantitatively undivided with respect to the fact that it has no extension although it has a position, [and that which] is said to be quantitatively undivided while it has extension -either by virtue of the fact that it is hard to divide it, or because it cannot be used when it is divided, or by virtue of the fact that its quiddity becomes invalid when it is divided, or by virtue of the fact that its extension escapes the senses, or that it escapes the instruments to divide it, or because law prohibits its division, or by virtue of the fact that the quiddity of the body which is in it prohibits its division, or by virtue of the fact that it is assumed to be the smallest [of small things]-, and that which is said to be undivided by virtue of the fact that it is not characterized by several accidents, and that which is said to be

⁸²⁸ Reading بشيء شيء with the mss. and Martini Bonadeo and her team instead of Mahdi's بشيء شيء.

⁸²⁹ With the mss. and Martini Bonadeo and her team, I do not add منفرد as Mahdi does.

⁸³⁰ In other words, X is one in this sense because it is separated from others by Z. Assume that Y is in the same species as X; Y is also one in this sense because it is separated from others by W. So "[Z] marks [X] out from [Y] and [X] is separated by [Z];" likewise, "[W] marks [Y] out from [X] and [Y] is separated by [W]."

undivided by virtue of the fact that its quiddity is not divided at all, these all agree in that they are not divided.

(80) However, it is not possible for some of them to have any multiplicity in it at all, like that whose quiddity is not divided at all. [As for] that which is not quantitatively divided by virtue of its quiddity, since it has no extension while having a certain position, it is not possible for it [91] to have any multiplicity in it. [It is likewise with] those which are not divided into subjects more specific than themselves; of these, each one of what is a body like Zayd, or ‘Amr, or this horse, or this donkey, is a certain totality; of these, what is like this knowledge in Zayd’s mind is not quantitatively divided. Also, [as for] that which is not divided by virtue of its not being characterized by several accidents at all, and that whose quiddity is not divided according to the multiplicity of the names and the formulae and by virtue of the multiplicity of the inflections denoting it, it follows regarding these two [*yalzamu min hādhayn*] that they are divided by no means and in no way.

(81) That which is said to be one in the sense that it does not have a co-participant in what it is characterized by is general, comprehending many things, and it does not fall under any of the previous classes of that of which ‘one’ is said.

(82) [As for] that which is said to be one by virtue of its being circumscribed from other things by a certain quiddity, be it a general or specific [quiddity], or circumscribed by a [certain] extremity, or [92] circumscribed by a certain place, they are similar in that they are circumscribed by one of these.

Chapter XII: That which is said to be one is summarized

(83) That which is said to be one comprises what is one in predicate, what is one in subject, what is one in number, what is one by virtue of the fact that it is a totality, what is one by virtue of the fact that it is undivided, what is one by virtue of the fact that it has no co-participant, what is one by virtue of the fact that it is circumscribed by a certain quiddity from things other than itself among what has a quiddity, or by virtue of the fact that it is circumscribed by an extremity or by a place.

(84) It is evident that if [something] is not circumscribed by a certain extremity or⁸³¹ by a certain place, it is in contact or continuous [with something]. If it is not circumscribed by a certain extremity, it is continuous [with something]. In relation to [*bi-l-iḍāfa*] that with which it is continuous, another unity belongs to it [*ta'ūdu lahu*] and it becomes one by virtue of this unity in a sense other than⁸³² the sense in which it was one before this. And if it is not circumscribed by a certain quiddity, but rather it participates with something else in a certain quiddity, it and that which participates with it in that quiddity are one in predicate.

(85) [93] [As for] those which are one by virtue of the fact that their genus is one in number, or by virtue of the fact that their species is one in number, or [by virtue of the fact that] the formula denoting their quiddity is one in number, or by virtue of the fact that one accident is predicated of them or many accidents [which are one in species] [are predicated of them], or by virtue of the fact that they perform a function which is one in species or in number, or by virtue of the fact that an aim that is one in species or in number is achieved by them, or [by virtue of the fact that] their relations to that to which they are related are one in species, these all agree in that it is said of several things that they are one on account of the fact that that which is predicated of them is a predicate which is one in number.

(86) [As for] those which are one by virtue of the fact that their proximate or remote matter is one in species or in number, and by virtue of the fact that several accidents are predicated of a subject which is one in number, and by virtue of the fact that a genus and an accident are predicated of a subject which is one in number, and by virtue of the fact that a species and an accident are predicated of a subject which is one in number, [these] agree in that it is said of several things that they are one on account of the fact that their subject is one in number.

[94] (87) [As for] that which is said to be one by virtue of the fact that it is continuous – be it a straight line or a circular [line] or a plane, or a bent [surface],⁸³³ or a spherical body or solid,⁸³⁴

⁸³¹ With Martini Bonadeo and her team, keeping بنهاية ما and adding أو after it.

⁸³² Reading بغير with Martini Bonadeo and her team against لغير in the mss. and Mahdi.

⁸³³ Reading منحنيًا with Martini Bonadeo and her team.

⁸³⁴ Given the other examples coming before and after this one, we expect al-Fārābī to mention a type of surface (after the plane, i.e., the “simple [*basīṭ*]” surface, and “a bent [or curved, *munḥanin*] surface), or a type of solid (before the spherical solid and the polyhedra). The mss. have اربا. Mahdi has أربا (*arab* “wish, desire”?) which does not make sense here. Martini Bonadeo and her team read it in their apparatus as اربا, i.e., *irb* (“limb, member”); I could not find a geometrical sense of this word either. Martini Bonadeo and her team proposes to emend it into أزياء apparently as the plural of زِي, meaning “form” but I do not know what this would mean as a geometrical term (they

or [the solid] contained by planes [i.e., a polyhedron] - [these all agree] in that [any] two parts of each one [of them] terminate at a common extremity which is one in number, or that the parts of each one of them are not delimited by extremities in actuality.

(88) [As for] that which is said to be one by virtue of the fact that it is a body composed of [several] bodies –with similar or dissimilar parts- which are in mutual contact [and] linked by a bond which is one in number –[with the bond being] either artificial or natural-, and that which is said to be one by virtue of the fact that it is incorporeal [and] composed of incorporeal things which are formulae or intelligibles, and are linked by a bond which is one in number, [95] like one premise or one syllogism, and that which is said to be one by virtue of the fact that it is a thing composed of linked things with which it is sought [to achieve an aim] and its parts work together to achieve an aim which is one in number, like one definition, or one speech, or one poem, etc., and that which is said to be one by virtue of the fact that it is a whole [*kullī*] and complete thing composed of linked things which need nothing else external and extraneous to it [*khārij gharīb ‘anhu*] in order to attain what is sought to achieve, these all agree in that [each of] them is a totality, comprehending many things, and [each] becomes a totality only by virtue of some of these things’ being linked to others, [that is], either [by virtue of the fact] that they are linked by a bond which is one in number or that any two of them are linked to each other by a bond which is one in species or in genus, for it comes to be that on account of the fact that the species or the genus is one in number. You ought to know that [the totality]’s parts stand together [*tuqārība*] in a place⁸³⁵ in case they are bodies, or its parts stand together [simply] in case they are formulae, which is likewise by virtue of the number of [their] bonds, regardless of whether they are delimited magnitudes, in case [96] they are bodies, or they are not delimited. For if they are delimited, their circumscription by an extremity is another unity pertaining to them which is different from the unity they have by virtue of their being a totality.

(89) Also, [as for] that which is said to be one in number by virtue of the fact that it has many names, or by virtue of the fact that it has a name and a formula denoting it, or by virtue of the

translate *أزياء أو مصمتا كريا* as “di forme solide sferiche” but I do not know why they omit the *aw* in the middle). I tentatively read *جرما*, and taking the following *أو* to be epexegetical (i.e., *جرما أو مصمتا كريا* meaning “a spherical body or solid”).

Mahdi adds *أو* between *مصمتا* and *كريا* but this is not in any of the mss.

⁸³⁵ i.e., the corporeal parts which are linked to each other are in one primary place, that is, one part is not circumscribed from the other by a place. For parallel passages, see paragraphs 84 and 95.

fact that a genus and an accident are predicated of it, or by virtue of the fact two accidents are predicated of it, or by virtue of the fact that two things in a totality are related to one thing – whatever relation it may be-, [these all] agree in that the quiddity of [each] does not change⁸³⁶ with the change⁸³⁷ of these several things imposed on it, and [its quiddity] is not multiplied, while its quiddity becomes numbered [*dhāt ‘adad*] on account of the multiplicity of the number of the several things said of it. Also, its quiddity is not divided according to the division [*inqisām*] of the several things to which it is related, even though it involves something divided in another respect.

[97] (90) ‘That which is divided’ [*al-munqasam*] is sometimes said of what has components [*aqsām*], and sometimes said of what has no components [at the moment] although it is possible for it to come to have components in the future, and sometimes said of that for which there exists a co-participant from a species which is divided in one of those two respects.

Part V: The summary of what ‘one’ is said of

Chapter XIII: ‘One’ is said in many ways

(91) ‘One’ is said in many ways. In one way, two things are said to be one or it is said [that] this and that are one. That is said with regard to any pair of things only in one of [these two] respects: either by virtue of the fact that one thing is predicated of them or by virtue of the fact that their subject is [98] one thing. [One of these is the one in genus]. Another is the one in species. Another is the one in matter [*bi-l- ‘unṣur wa-l-mādda*], either in proximate matter [*mādda*] or in remote matter [*mādda*], more precisely if their matter [*mādda*] is under a species which is one in number, or their matter [*mādda*] is one in number by way of one replacing the other. Another is [the ‘one’ said of] the things whose formula denoting their quiddity is one, and this reduces to

⁸³⁶ Reading لا تتغير instead of تتعين in both editions, where MS. A has البيعين, MS. B has the same *rasm* without the diacritics, and MS. C has the same *rasm* but leaving the letter after ل without diacritics, pointing the letter after that as ت, pointing the letter after ع as ي, and leaving the final letter without diacritics. We can read تتعين if it can mean “remaining the same.” More on the sense of this and the other parallel passages above, see the first footnote in paragraph 8.

⁸³⁷ Reading بتغير instead of بتعين in both editions. MS. A has يتعين, MS. B has the same *rasm* without the diacritics except for the point above the ن at the end, and MS. C has the same *rasm* but pointing the first letter as ب and the penultimate letter as ي and leaving the rest without diacritics. We can also read بتعيين with Mushtāq (as indicated in the apparatus in the edition by Martini Bonadeo and her team) and then this phrase would mean “with the imposition of these several things on it.”

[the ‘one’ said of] the things which are one in species. Another is the one by virtue of a certain accident. Also, ‘one’ is said of any pair of things such that they perform a function which is one in species, if each one of them, on its own, is made to achieve an aim which is one and the same.

(92) Another is the one in number, and this [is said] in different ways. One of these is the case in which a thing is named by several names, for that which is named by one of the two [names] and that which is named by the other are one. Another is the case in which a thing [which] has a name, and a definition or a description, by virtue of the fact that the named and that which is denoted by the definition or the description are one. Another is the case in which it is one accidentally as in our saying that the speaker and our God are one, or [that] Zayd and the speaker are one. Another is the case that [99] [something] is one by virtue of being related [*tanāsub*], that is, its relation to a certain entity is like the relation of another thing [to the same entity]: the two related things related by this relation are themselves one in that [the entity they are related to] is one, [and they are one] in ways in which ‘one and the same’ is said of [that entity].

(93) In respect of its being continuous, ‘one’ is also said of that which has similar parts and is continuous *qua* magnitude [*al-muttaṣil bi-l-‘iṣam*], be it a line, or a plane, or a body. This includes something continuous and straight, and a line, of which it is believed that the inclined [*mumayyal*]⁸³⁸ is the most proper for being one. This is why a circular [line] is the most proper of [the lines] for the one. It is also said of magnitudes –with dissimilar or similar parts- whose parts are in mutual contact and some of whose parts are linked to others such that they remain [linked] with glue,⁸³⁹ or with welding, or [100] with pegs, or by binding, or by plugging from outside; especially, out of certain parts a totality emerges whose parts support each other to achieve their aim⁸⁴⁰ with a [mutual] assistance [of its parts]⁸⁴¹ for the generation [*kawn*] of [its] effect with its parts working together. Of these, what is most truly one is that which does not lack any part by which it is constituted [*al-kā’in ‘anhu*] and is complete. Likewise, [as for] each totality assembled [*multa’ima*] from parts some of which are linked to others and all of which support each other for completely achieving [*takmīl*] one aim– like one speech or one premise or one

⁸³⁸ Reading الممّيل with Martini Bonadeo and her team instead of Mahdi’s الميل.

⁸³⁹ Reading بلزاق with Martini Bonadeo and her team instead of Mahdi’s بدراو. Compare with “بلزاق” in a parallel passage in paragraph 13, at 48.12.

⁸⁴⁰ Reading غرضها with Martini Bonadeo and her team instead of Mahdi’s غرض ما.

⁸⁴¹ Reading بمعونة ما instead of معونة in Mahdi and معونة in Martini Bonadeo and her team.

syllogism – [it is said to be one] when it is [so] by virtue of one term or one conditional and leads to one conclusion.

(94) Also, ‘one’ is said of that which is not quantitatively divided at all, like a point, unity, and an extremity in respect of its being an extremity. And ‘one’ is said of that which is not divided by virtue of various accidents by which it is qualified [*yun ‘atu*], like that in which no accident is present at all or only one [accident] is present. [101] ‘One’ is also said of that which is not denoted by many formulae said of it in many [different] meanings pertaining to it, and it is not divided according to the several formulae said of it. ‘One’ is also said of that which is not divided by virtue of a formula denoting its quiddity, and its quiddity is undivided; it is understood to be what⁸⁴² is denoted by an undivided expression, and it produces an effect which is not divided at all. ‘One’ is also said of that which has no co-participant in the existence [*wujūd*] it has – whatever existence it may be-, that is to say, it has no co-participant in its genus, or in its species, or in an accident of knowledge or of a rank in place or of something else, and this is the case either by nature or by will, or by chance or compulsion: this is like saying that ‘I have a coin’, which happens sometimes by will and sometimes by chance, or by nature as in the fact that the sun is one [in this sense], and [that] the moon is one [in this sense]. ‘One’ is also said of all that is circumscribed by a quiddity proper to it and an existence proper to it, and⁸⁴³ it is circumscribed from everything else. So, it is one by virtue of a unity by virtue of which it is circumscribed⁸⁴⁴ from other things. If the quiddity of each thing is circumscribed from what is other than it only by some [102] of the categories, and it is equal [*musāwīyan*] [in extension] to ‘existent’ which denotes the categories and each of what has a certain quiddity,⁸⁴⁵ then it is also equal [in extension] to ‘thing’.

(95) So these are the ways in which ‘one’ is said. Being undivided in the respect in which it is said to be one is common to all that is said to be one. For those which are themselves one are divided neither in respect of their genus nor their species nor something else, and the continuous is undivided with regard to extremities, and those which are in mutual contact are undivided with

⁸⁴² Reading ما with the mss. and Martini Bonadeo and her team.

⁸⁴³ Reading وينحاز with the mss. and Martini Bonadeo and her team.

⁸⁴⁴ Deleting بأجزائه with Mahdi. I assume that this is a corruption of بانحيازه which was a later gloss. If we keep بأجزائه, we should take this *bi-* in the sense of “with;” so the whole clause would mean, “by virtue of which it is circumscribed together with its parts from other things.”

⁸⁴⁵ Reading له ماهية ما after ما على كل ما with the mss. and Martini Bonadeo and her team.

regard to the places of their extremities, for any two things [in mutual contact] are in one primary place.⁸⁴⁶ [It is] likewise with any two things which are not divided with regard to the bond which binds them. The existence of that which has no co-participant is not divided with regard to [subjects which are] more than one. Also, that which is circumscribed by an existence proper to it is likewise [undivided], for that which is proper to it [i.e., this existence] is not divided along with it and something else [‘*alayhi wa-‘alā ghayrihi*].

(96) The account on one and unity has been completed.

⁸⁴⁶ For the term “primary place,” see Aristotle’s *Physics* IV.2.209a32-b1. Also see, *Physics* V.3 226b21-3.

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