Yaḥyā ibn ‘Adī, Imkān, and the Problem of Divine Foreknowledge

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Abstract

This thesis examines Yaḥyā ibn ʿAdī's (d. 974 CE) treatment of the problem of divine foreknowledge. Yaḥyā ibn ʿAdī was a Jacobite Christian theologian and philosopher born in 893 CE to a family of Syriac-speaking Christians in Tikrit, Iraq. After moving to Baghdad—at that time the flourishing intellectual and cultural capital of the Abbasid Empire—Yaḥyā studied under the scholarch of the Baghdad Peripatetics, Abū Bishr ibn Mattā (d. 940 CE), and alongside the influential Muslim philosopher and logician, al-Fārābī (d. 950 CE). Yaḥyā's Risāla fī Ithbāt Ṭabīʿat al-Mumkin [Treatise on the Affirmation of the Nature of the Contingent] is his most extended treatment of the problem of divine foreknowledge. The thesis offers a historical contextualization and analysis of the treatise, focusing on Yaḥyā's attempts to solve the problem of divine foreknowledge, a classical theological puzzle that attempts to force a choice between God's omniscience and the reality of contingency. We argue that Yaḥyā offers a philosophically innovative solution that maintains the absolute immutability of God while denying the absolute immutability of His knowledge, while building upon earlier efforts by his late antique predecessors, such as Stephanus (d. 640 CE), Ammonius (d. ca. 526 CE), Boethius (d. 524 CE) and Iamblichus (d. 325 CE).

Ce mémoire explore la façon dont d'Yaḥyā ibn ʿAdī traite le problème de la prescience divine. Yaḥyā était un théologien et philosophe né en 893 ap. J.-C. dans une famille de Chrétiens Syriaques en Tikrit, Irak. Après avoir déménagé à Bagdad - à ce moment la capitale culturelle et intellectuelle florissante de l'empire Abbaside. Yaḥyā étudia auprès du maître des péripatéticiens de Bagdad, Abū Bishr ibn Mattā (d. 940 ap. J.-C.), et aux cotés du philosophe et logicien musulman influent, al-Fārābī. Son traité, Risāla fī Ithbāt Ṭabīʿat al-Mumkin [Traité sur l'affirmation de la nature du contingent], constitue le texte où Yaḥyā discute le plus le problème de la prescience divine. Ce mémoire présente une contextualisation historique et une analyse du texte en se concentrant sur les tentatives de Yaḥyā de résoudre le problème de la prescience divine, un dilemme théologique classique qui essaye de nous forcer à choisir entre l'omniscience de Dieu et la réalité de la contingence. Nous affirmons que Yaḥyā offre une solution philosophique innovante qui nie l'immutabilité absolue de la connaissance divine, tout en préservant l'immutabilité absolue de Dieu lui-même. Nous appuierons également nos propos sur comment Yaḥyā se base sur ses prédécesseurs de l'Antiquité tardive, tel qu' Étienne d'Alexandrie (d. 640 ap. J.-C.) Ammonios (d. 526 ap. J.-C.) et Jamblique (d. 325 ap. J.-C).

رب اشرح لي صدري و يسر لي أمري و احلل عقدة من لساني يفقه قولي

My Lord, expand my breast, lighten my task, undo the knot on my tongue, so they may understand what I say.

To my parents, for teaching me the *qāf* and the *nūn*.
To Rob and Peter, for guiding my appreciation of the *qāf* and the *nūn*.
To Rob, Peter, Nish, Rick, Erik, and Brittany for their careful revision and helpful comments.

Yā ʿAlī madad

Chapter 1: Introduction, Literature Review, and Historiographical Concerns

      I.   Introduction

This thesis is about the contribution of Yaḥyā ibn 'Adī (d. 974 CE), an Abbasid-era Jacobite Christian peripatetic philosopher and theologian, to the Arabic reception of Ancient Greek philosophy. Born in 893 CE to a family of Syriac-speaking Christians in Tikrit, located in modern-day central Iraq, Yaḥyā ibn ʿAdī studied in Baghdad under the luminary Christian translator and scholarch of the Baghdad peripatetics, Abū Bishr Mattā ibn Yūnus (d. 940 CE), and alongside the influential Muslim philosopher and logician al-Fārābī (d. 950 CE). Yaḥyā is best known for his translations of and commentaries on Aristotelian philosophy, as well as for his treatises addressing questions arising from the interpretation of Porphyry's *Isagoge* and Aristotle's *Categories* and *De Interpretatione*. Yaḥyā lived during and contributed to a pivotal movement in the history of philosophy which oversaw Muslims, Christians, and Jews working alongside one another to translate and study Greek philosophy, mathematics, and medicine, among other subjects.

This thesis examines Yaḥyā's defense of the reality of the contingent in the face of determinist arguments through translating and analyzing his *Risālah fī Ithbāt Ṭabī'at al-Mumkin [Treatise on the Affirmation of the Nature of the Contingent]*. In this treatise, Yaḥyā presents, refutes, and explains the errors in what he considers to be the two strongest determinist arguments put forth by the deniers of contingency.[1] The first of these arguments is the problem of divine foreknowledge. The second is the sea-battle problem or the problem of future contingents.[2] Both stem from discussions originally found in Chapter IX of Aristotle's (d. 323 BCE) *De Interpretatione* [Περὶ Ἑρμηνείας; *On Interpretation*; *Kitāb al-'ibāra*], one of the most controversial and commented-upon passages within the Aristotelian corpus. Hitherto

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[1] We mean by the "contingent" the two-sided possible: that which is not necessary nor impossible.
[2] Also sometimes called the problem of future truth.

untranslated completely into English, Yaḥyā's treatise was critically edited by Ehrig-Eggert in Khalifat.[3]

With respect to the Arabic reception of *De Interpretatione* IX, Western scholarship has largely focused on the contribution of al-Fārābī (d. 950 CE), a fellow student , about 20 years Yaḥyā's senior.[4] Compared to the research and analysis published on al-Fārābī's commentary on *De Interpretatione*, there has been relatively little investigation of Yaḥyā's contribution to the commentary tradition surrounding *De Interpretatione* IX.[5] This thesis hopes to help fill this lacuna by providing the first analysis in English of Yaḥyā's treatment of the determinist proof from divine foreknowledge as found in his *Risālah fī Ithbāt Ṭabīʿat al-Mumkin*. Our analysis has three goals. First, how does Yaḥyā understand the proof? Second, how does he refute it? Finally, how does his understanding and refutation of the problem relate to the accounts of his late-antique predecessors and of his contemporary al-Fārābī?

As we will see, Yaḥyā presents an innovative solution to the determinist proof from divine foreknowledge which denies the absolute immutability of God's knowledge while preserving the immutability of God Himself. Secondly, we will see that his solution incorporates elements of a solution attributed to Iamblichus which allows the status of a knower to differ from the status that which is known. Thirdly, we will see how Yaḥyā utilizes *Categories* 7 to deny the absolute immutability of God's knowledge. Finally, we will see that Yaḥyā draws upon the Aristotelian distinction between simple and hypothetical necessity to argue that although the

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[3] Carl Ehrig Eggert, "Yaḥyā ibn ʿAdī: Uber den Nachweis der Natur des Möglichen," *Zeitschrift für Geschichte der Arabisch-Islamischen Wissenschaften* 5, (1989): 283-264; Sahban Khalifat, *Maqālāt Yaḥyā Ibn ʿAdī* (Amman: University of Jordan Press, 1988), 337-374.

[4] Al-Fārābī is one of the most influential and accomplished Islamic philosophers. He is known as the Second Teacher (*al-muʿallim al-thānī*) after Aristotle, who is the first. Street ("Arabic and Islamic Philosophy of language and logic," The Stanford Encyclopedia of Philosophy [Spring 2015], https://plato.stanford.edu/archives/spr2015/entries/arabic-islamic-language) considers al-Fārābī as "the first truly independent thinker in Arabic logic." Wisnovsky (*Avicenna's Metaphysics in Context* [Ithaca: Cornell University Press, 2003] 15; 266) echoes this sentiment.

[5] See, for example, Zimmerman (*Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione* [Oxford: Oxford University Press], 1981), Marmura ("Divine omniscience and future contingents in Alfarabi and Avicenna," in *Divine Omniscience and Omnipotence in Medieval Philosophy*, ed. T. Rudavsky [Dordrecht: Reidel, 1985], 81-94), Adamson (The Arabic sea battle: al-Fārābī on the problem of future contingents," *Archiv für Geschichte der Philosophie* 88, no. 2 [2006]: 163-188), Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn ʿAdī [gest. 974 A.D.]* [Frankfurt: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1990), or Gaskin (*The Sea Battle and the Master Argument* [Berlin: de Gruyter], 1995).

objects of God's knowledge must necessarily conform to God's knowledge of them, their necessity is extrinsic. On a philosophical level, we will observe Yaḥyā's insight and adeptness as he navigates this classic theological puzzle in original ways. On a historical level, we will witness the striking continuity between the intellectual traditions of ancient Athens, late-antique Alexandria, and medieval Baghdad.

The thesis consists of five chapters. In the introductory chapter, we lay out the goals of the project and present an overview of Yaḥyā's life and historical context. We then review the scholarly literature produced on Yaḥyā. Finally, we discuss the current state of the field of Islamic philosophy, highlighting certain relevant methodological and historiographical controversies concerning the study of Islamic philosophy in general, and more specifically concerning the study of non-Muslim scholars living in Islamic milieus. In Chapter 2 we offer a historical overview of *De Interpretatione* IX and its reception. Here we will examine the relevant works of Aristotle (d. 322 BCE), Boethius (d. 524 CE), Ammonius (d. 517/526 CE), Stephanus (d. 640 CE), and al-Fārābī (d. 950 CE). Chapter 3 analyzes Yaḥyā's discussion of the proof and situates it historically. In the interest of focusing our discussion, we will not examine Yaḥyā's commentary of the problem of future contingents, found in the final (seventh) chapter of *Risālah fī Ithbāt Ṭabīʿat al-Mumkin*. Our conclusion summarizes the results of our investigation and suggests possible avenues for future inquiry. We attach our translation of Yaḥyā's treatise in the appendix; this translation is the first time the entire text has been translated into English.

II. Yaḥyā: Life and Historical Milieu

Abū Zakariyyā Yaḥyā ibn ʿAdī Ibn Ḥamīd ibn Zakariyyā al-Takrītī al-Manṭiqī was born to a family of Jacobite or Monophysite origin in Tikrit (also spelled Tekrit or Takrit) in 893 CE. [6] Tikrit is situated in modern-day Iraq, nearly 160 km north of Baghdad and 160 km south of Mosul. At a young age (sometime between the ages of 17 and 21), he moved to Baghdad to pursue his studies under the tutelage of the Nestorian Christian translator, physician, and

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[6] For more on these sects of Christianity, see Meno ("Syrian Orthodox Church." *Encyclopedia of Christianity Online*, 2019), http://dx.doi.org/10.1163/2211-2685_eco_SI.121). Broadly, Jacobites or Monophysites held that in Christ there is one essence which is jointly divine and human. Nestorians believed that in Christ there are two independent essences, one human and one divine.

philosopher Abū Bishr Mattā ibn Yūnus (d. 940), who was the scholarch of the Baghdad peripatetics, as well as with the influential Muslim philosopher al-Fārābī (d. 950 CE).[7] Yaḥyā lived during a period which saw unprecedented cultural and intellectual flourishment. Endress considers Yaḥyā's period to represent a "veritable renaissance of Aristotelian studies, assembling ... the most complete and most authentic Aristotle available at any time in the Arabic Middle Ages."[8] Similarly, Netton considers the period of al-Farābī to be "one of the richest intellectually in the entire development of Medieval Islamic thought."[9] Yaḥyā lived during the height of the Graeco-Arabic translation movement, which spanned from about the mid-8th century CE to the mid-10th and included the reigns of Abbasid rulers al-Manṣūr (d. 775 CE), Hārūn al-Rashīd (d. 809), al-Ma'mūn (d. 833), and al-Mu'taṣim (d. 842).[10] This period witnessed the unprecedented translation into Arabic of "almost *all* non-literary and non-historical secular Greek books that were available throughout the Eastern Byzantine Empire."[11] This included works on a vast range of subjects: alchemy, astrology, arithmetic, geometry, musical theory, metaphysics, ethics, logic, physics, zoology, botany, medicine, pharmacology, and veterinary science, among other more specialty subjects such as falconry and military science.[12] As Gutas and Fakhry note, the Arabic translation movement was neither isolated nor ephemeral. Lasting for over two centuries, it enjoyed widespread support by the elite of Abbasid society.[13] Ample funding, public and private, was provided for its undertaking. As it developed, it was conducted with increasing philological rigor and scientific exactitude; technical lexica and philological techniques were established to ensure coherence and consistency.[14] The Graeco-Arabic

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[7] Muhammad Nasir Bin Omar, "The life of Yahya Ibn 'Adi: A famous Christian philosopher of Baghdad," *Mediterranean Journal of Social Sciences* 6, no. 2 (2015): 308-314.

[8] Gerhard Endress. "Yaḥyā Ibn 'Adī," in *Philosophy in the Islamic World*, eds. Rudolph, Ulrich, Rotraud E Hansberger, and Peter Adamson (Leiden: Boston, 2017), 434-467.

[9] Ian Richard Netton, *Al-Fārābī and His School* (London: Routledge, 1992), 1.

[10] Al-Ma'mūn allegedly paid his translators the weight in gold of the books they translated (Nicholas Rescher, *The Development of Arabic Logic* [Pittsburgh: Pittsburgh University Press, 1964], 23). See Cooperson (*Al-Ma'mūn* [Oxford: Oneworld, 2002]) for more on this important caliph. For a more complete account of the Abbasid caliphs involved in the Graeco-Arabic translation movement, see the chart in Gutas (*Greek Thought, Arabic Culture* [London: Routledge, 1998], xviii).

[11] Dimitri Gutas, *Greek Thought, Arabic Culture*, 1. Italics in original.

[12] Gutas, *Greek Thought, Arabic Culture,* 1; Majid Fakhry. *A History of Islamic Philosophy* [New York: Columbia University Press, 2004], xxiii.

[13] Fakhry, *A History of Islamic Philosophy,* xxi-xxii; Gutas, *Greek Thought and Arabic Culture*, 1.

[14] Gutas, *Greek Thought, Arabic Culture,* 2-3.

translation movement was not a movement specific to one ethnic or religious group. [15] The support for the translation movement "cut across all lines of religious, sectarian, ethnic, tribal, and linguistic demarcation. Patrons were Arabs and non-Arabs, Muslims and non-Muslims, Sunnīs and Shī'ites, generals and civilians, merchants and land-owners."[16] Muslims, Christians, and Jews all contributed in some way. For this reason, it is more appropriately cast as a translation movement, as opposed to a translation event.

The Islamic conquests of the seventh and eighth centuries provided the initial point of contact between Muslims and Greek thought.[17] In the 118 years between the Prophet Muhammad's death in 632 CE and the end of the Umayyad dynasty in 750 CE, the Islamic conquests established a sweeping empire that stretched from Andalusia to India. This expansion put into contact regions that, since Alexander the Great's (d. 323 BCE) time, had been largely culturally and politically isolated by the Hellenized Byzantine empire to the West and the Persian Sasanian empire to the East.[18] For example, under Islamic rule, Egypt and Mesopotamia regained economic and political contact with India, and, for the first time in about a millenium, goods such as silk, spices, and gold could travel unhindered by political division across the Near East. When the Islamic armies gained control of the Hellenized Byzantine learning institutions at, most notably, Alexandria in Egypt, but also Edessa and Harran in present-day Syria and Turkey, and Mosul and Dayr Qunnā in present-day Iraq, among others, they initiated the Graeco-Arabic cultural contact which permanently influenced medieval Islamic science, theology, and philosophy.[19] The scholars of these learning centers, the majority of whom were Christians, were well-versed in Greek (seen as a scholarly as well as a liturgical language) and Syriac, their native

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[15] The prolific Syriac Christian translator, Ḥunayn ibn Isḥāq (d. 873 CE) is usually considered to have been the first to establish a rigorous and internally consistent Graeco-Arabic philosophical lexicon (Street, "Arabic and Islamic Philosophy of Language and Logic," *The Stanford Encyclopedia of Philosophy*).

[16] Gutas, *Greek Thought, Arabic Culture*, 5.

[17] As we will see, this is not the first instance of Eastern contact with Greek thought.

[18] Gutas, *Greek Thought, Arabic Culture,* 11; Street, "Arabic and Islamic philosophy of language and logic."

[19] Not to mention how Islamic thought influences the Latin scholastic tradition; see for example Davidson (*Proofs for Eternity, Creation and the Existence of God in Medieval Islamic and Jewish Philosophy* [Oxford: Oxford University Press, 1987]) or Hasse and Bertolacci (*The Arabic, Hebrew and Latin Reception of Avicenna's Metaphysics* [Berlin: De Gruyter, 2012]) for more on the Latin reception of Islamic philosophy.

tongue.[20] They were thereby capable of providing the linguistic bridge between the Indo-European Ancient Greek and Semitic Syriac/Arabic languages.[21]

In addition to the Hellenized Byzantine Christian centers of learning, the Greek sciences had also spread into Persian territory and were a part of secular and religious school curricula in such cities as Jundishapur, Nisibis, and Marw.[22] Hence when the last Sassanian Shah died in 651 CE, and the Islamic conquest of Persia was complete, the Muslims inherited these learning centers. [23]

The curriculum at Byzantine late-antique institutions at the time of the Islamic conquests generally consisted of an elementary program in logic and mathematics which prepared students for later more advanced and specialized study in astronomy, medicine, or theology. In this sense, logic held a central position in the school curriculum. Regardless of eventual advanced coursework, all students shared logic as a common component of their early studies.[24] The logic studied was Aristotelian, and it was relatively introductory, including only Porphyry's (d. ca. 305 CE) *Eisagoge* (itself is an introduction to the *Categories*) and the first three books in the traditional (late-antique) ordering of Aristotle's *Organon*, ending with *Prior Analytics* I.7.[25] In astronomy and astrology, Ptolemy (d. ca. 170 CE) was likely studied. In medicine, the works of Galen (d. 210 CE) were read.[26]

As for the method of instruction, the prolific Syriac-Arabic translator and physician, Ḥunayn ibn Isḥāq (d. 873 CE) compares the learning methods in the Baghdad of his day with those of Alexandria in late Antiquity, noting that in both "colleagues gather everyday in places known as *skolé*" and "read the commentaries of the books by the ancients."[27] This indicates an intellectual continuity between the pedagogical traditions of Byzantine Alexandria and Abbasid Baghdad, and it also suggests that the Islamic thinkers of Abbasid Baghdad were aware, if not

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[20] A notable exception is Ḥarrān in northern Mesopotamia, which remained pagan well into the 10th century CE (Gutas*, Greek Thought, Arabic Culture*, 14).

[21] Nicholas Rescher. *The Development of Arabic Logic*, 16.

[22] Gutas 1998, 14; Yegane Shayegan, "The transmission of Greek philosophy to the Islamic world," 194.

[23] For a more detailed history of these Persian learning centers, see Haq ("The Persian and Indian background," in *History of Islamic Philosophy*, eds. Seyyed Hossein Nasr and Oliver Leaman [Routledge: London, 1996], 112-202).

[24] Rescher, *The Development of Arabic Logic,* 15-16.

[25] Street, "Arabic and Islamic philosophy of language and logic."

[26] Gutas, *Greek Thought, Arabic Culture*, 15; D'ancona, "Greek sources in Arabic and Islamic philosophy."

[27] Gutas, *Greek Thought, Arabic Culture*, 15. Italics added.

proud, of this direct connection to the intellectual methods and traditions of late Antiquity. In this sense, the Islamic thinkers inherited from late Antiquity an intellectual respect for ancient Greek thought.[28] Hence, Yaḥyā and al-Fārābī likely studied *De Interpretatione* as well as its late Antiquity commentaries in the 9th/10th century CE with a methodology and a curriculum not dramatically different from how the text was studied in Alexandria in the 6th/7th century CE.

Thus the inheritance of the Greek philosophical tradition by the Islamic philosophers from Antiquity was not a direct one; it was filtered and shaped by nearly seven centuries of late Antiquity thought and historical contingency.[29] The Arabic philosophers did not read Aristotle as he was read during his time; they read him through the lens and biases of late Antiquity and its intellectual traditions. They inherited from the Ancient Greek world only that which Late Antiquity permitted; they became experts on Aristotle, Galen and Ptolemy while never glimpsing a page of Sophocles, Aeschylus or Homer.[30]

The intermediary step represented by Hellenized Late Antiquity dramatically affected not only the sorts of Ancient Greek texts to which Islamic thinkers accessed, but also the ways in which they interpreted and understood these texts. In Antiquity, Aristotelian logic had no particularly preeminent status. From Aristotle's death in 322 BCE until about the 1st century CE, rivalrous competitions among the philosophical schools of the Stoics, the Epicureans, and the academic Skeptics kept Aristotelian philosophy in a relatively subordinate position within the curricula of the philosophical schools of the age.[31] It was not until the first centuries CE, i.e. at

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[28] For example, the 11th century Iberian historian Ṣāʿid al-Andalusī writes that "the Greek philosophers belong to the highest class of human beings and to the greatest scholars" (Franz Rosenthal [ed.], *The Classical Heritage in Islam* [London: Routledge and Kegan Paul, 1975], 39).

[29] Interestingly, despite the fact that the learning centers at Alexandria and elsewhere were captured by the Umayyads between 632 and 750 CE, the translation movement and interest in Greek science did not begin until the Abbasid revolution in 750 CE. This suggests that for whatever reason, the Umayyads were not as interested in translating and examining these texts as the Abbasids were. The examination of these reasons is one of the main goals of Gutas' *Greek Thought, Arabic Culture*; he seeks to investigate the sociological, political, cultural and economic characteristics of the Abbasid empire and their relation to the translation movement.

[30] Francis Edward Peters. "The Greek and Syriac background," in *History of Islamic Philosophy*, eds. Seyyed Hossein Nasr and Oliver Leaman (London: Routledge, 1996), 94.

[31] Andrea Falcon. "The reception of Aristotle in antiquity," *Oxford Handbooks Online* (September 2015). https://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199935314.001.0001/oxfordhb-9780199935314-e-54.

the advent of Late Antiquity,[32] that Aristotelian logic began to gain a foundational position in school curricula.

Why did Aristotle gain such popularity in Late Antiquity? A complete treatment of this question lies outside the scope of the present project, but we can briefly mention three main reasons. First is the pedagogic utility of Aristotle's logic. The first few books of the *Organon*, the name which late-antique commentators gave to Aristotle's six books on logic, provide an introduction to the notions of statements, subjects, predicates, definition, contradiction, among other topics, and thus it represented a useful intellectual tool for the students of Alexandria and the other late-antique learning centers, where the chief subjects of study were medicine, astronomy, and philosophy.[33] This is why, argues Fakhry, we see a large amount of commentary and translation activity on the foundational Aristotelian logical works and less on later more advanced ones; the latter do not offer the same pedagogic merit as the foundations established in the first three books of the *Organon (Categories*, *De Interpretatione*, and the first seven chapters of the *Prior Analytics*) which were school textbooks for late-antique students.[34]

A second important reason for Aristotle's popularity over other philosophical schools is linked to the Christianization of the Roman Empire. This process spanned about two centuries and it included physical persecution of pagan philosophers, eventually culminating in the

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[32] Andronicus of Rhodes (fl. ca. 60 BCE) is accredited with producing the first definitive edition of Aristotle's πραγματεία, or "school-treatises" which greatly facilitated the revivification of Aristotelian thought in the last century BCE. His sequencing and division of Aristotle's works established the standard organization of the Aristotelian corpus for late Antiquity as well as Medieval Islamic thinkers (Hans Gottschalk, "The earliest Aristotelian commentators," in *Aristotle Transformed*, ed. Richard Sorabji [London: Bloomsbury, 2016], 61-62).

[33] As Frede and Rescher note, the relationship between philosophy and medicine was deeply seeded in the intellectual traditions of Antiquity and late Antiquity (Michael Frede, *Essays in Ancient Philosophy* [Minneapolis: University of Minnesota Press, 1987], 225; Nicholas Rescher, *The Development of Arabic Logic*, 19). Burnet writes that it is impossible to understand the history of philosophy in the Western tradition without also keeping in mind the history of medicine (John Burnet, *Early Greek Philosophy* [London: A&C Black, 1920], 178). This strong link between medicine and philosophy is reflected in the Islamic intellectual tradition, as many of the most influential Islamic philosophers (e.g. Avicenna [d. 1037 CE], Averroes [d. 1198 CE] Maimonides [d. 1204 CE]) were also physicians (Dimitri Gutas, "Ibn Sina [Avicenna]," *The Stanford Encyclopedia of Philosophy* [Fall 2016 Edition], https://plato.stanford.edu/archives/fall2016/entries/ibn-sina; Kenneth Seeskin, "Maimonides," *The Stanford Encyclopedia of Philosophy* [Spring 2017 Edition], https://plato.stanford.edu/archives/spr2017/entries/maimonides; Abdelghani Tbakhi and Samir Amr, Tbakhi, "Ibn Rushd [Averroës]: Prince of Science," *Annals of Saudi Medicine* 28, no. 2 [2008]: 145–47).

[34] Fakhry, *History of Islamic Philosophy,* 2.

Byzantine emperor Justinian I's closing of the philosophical school at Athens in 529 CE.[35] The transition from Greek paganism to Christianity dramatically altered the intellectual and cultural landscape of late Antiquity and also heavily influenced the sorts of texts and intellectual traditions that the Islamic thinkers inherited from their Hellenized Byzantine predecessors.[36]

During most of late antiquity, Neoplatonism dominated the curricula of the philosophical academies at Alexandria and Athens. Alexandria was the only philosophical academy which survived until the Islamic conquests in 641 CE.[37] Neoplatonism, in the eyes of Christian authorities, formed the basis of a pagan philosophical system which defended such heretical beliefs as the co-eternity of the world with God.[38] In the 5th and 6th century Christian attacks against pagan thinkers were at their height.[39] Ammonius Hermiae (d. 517/526 CE), a fervent Neoplatonist and one of the most influential late-antique philosophers, directed the academy at Alexandria.[40] Facing pressure from Christian rulers, who controlled the salaries and stipends of the students and instructors at the school, Ammonius allegedly negotiated a deal in the late 5th century with Athanasius II, the bishop of Alexandria.[41] This agreement had important consequences for the history of philosophy at large. Although the precise terms of the agreement are unclear, it is likely that Ammonius agreed to shift the pedagogical orientations of Alexandria

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[35] Felix Klein-Franke, "Al-Kindi," in *History of Islamic Philosophy*, eds. Seyyed Hossein Nasr and Oliver Leaman (London; New York: Routledge, 1996), 326; Dimitri Gutas, *Greek Philosophers in the Arabic Tradition* (London: Routledge, 2000), 4942.

[36] One may consider the conversion of the Roman emperor Constantine the Great (d. 337 CE) to Christianity in 312 CE to mark the start of the Christianization of Late Rome/Early Byzantium (John J. Norwich, *Byzantium* (New York: Knopf, 1999), 53).

[37] Peters, "The Greek and Syriac Background," 97; Fakhry, *A History of Islamic Philosophy*, 2.

[38] Muhsin Mahdi, "Alfarabi against Philoponus," *Journal of Near Eastern Studies* 26, no. 4 (1967): 233-4. https://www.jstor.org/stable/543594.

[39] In fact, some Alexandrians saw the Muslim invasion as a liberation, since the Muslims were more tolerant to the study of Greek science and medicine than were the Byzantine Christians (Rescher, *The Development of Arabic Logic*, 15).

[40] Not to be confused with Ammonius Sacchus (d. 242 CE) another important Alexandrian Neoplatonist and the alleged teacher of the Plotinus (d. 270 CE) (Lloyd Gerson, "Plotinus," *Stanford Encyclopedia of Philosophy* (Fall 2018), https://plato.stanford.edu/archives/fall2018/entries/plotinus).

[41] Maspero discusses a Christian association called the Philoponoi who planned and executed attacks against pagan teachers and temples in 5th century Alexandria). Blank remarks that Ammonius himself was allegedly attacked by two Christian professors due to his belief in the eternity of the world. He also mentions the tragic death of Hypatia, a pagan philosopher who was lynched by Christians in the first quarter of the 5th century CE (Jean Maspero, *Histoire des patriarches d'Alexandrie depuis la mort de l'empereur Anastase jusqu'à la réconciliation* (Paris, 1923), 165-171; David Blank, "Ammonius," *Stanford Encyclopedia of Philosophy* (Winter 2017), https://plato.stanford.edu/archives/win2017/entries/ammonius); Shayegan, "The transmission of Greek philosophy to the Islamic world," 184-186; David Blank, "Ammonius."

in exchange for continued financial support from the state. [42] He agreed to teach less Plato (d. 347 BCE), whose *Timaeus* and *Parmenides* were identified with pagan polytheism, and instead focus on the more "scientific" and less divinely-oriented works of Aristotle. Ammonius, with his sincere Neoplatonic views, did not simply excise his Neoplatonic leanings from his teaching. The result was a type of what Verrycken calls a Neoplatonization of Aristotle, coupled with a reciprocal Aristotelization of Neoplatonism. [43] Late-antique attempts at synthesizing Aristotle and Plato, although epitomized in Ammonius and his successors, had begun as early as the 3rd century in the works of Porphyry and Iamblichus. [44] The impetus for this reconciliation was ultimately a need to strengthen the case for Greek philosophy in the face of Christianity. As Wisnovsky questions, how could one defend the soundness of classical Greek thought if two of its most foundational thinkers, i.e. Aristotle and Plato, disagree on such basic topics as the nature of the soul or the ultimate cause of reality? [45] Ammonius' harmonizing approach heavily influenced his students, such as Damascius (d. 550 CE), Olympiodorus (d. 570 CE), and Jean Philoponus (d. 570 CE), all influential thinkers in their own right, both in Athens until the closure of its philosophical academy in 529 CE and in Alexandria through the Islamic invasion

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[42] Blank discusses some of the historical controversies concerning this alleged agreement. Part of the controversy lies in the fact that our chief source on Ammonius' life, Damascius (d. after 538 CE), considered Ammonius to be a rather greedy man. This impression of Ammonius might have influenced his depiction of the deal as primarily motivated by financial considerations (David Blank, "Ammonius.").

[43] Koenrad Verrycken, "The metaphysics of Ammonius Son of Hermeias," in *Aristotle Transformed*, ed. Richard Sorabji (London: Bloomsbury, 2016), 230. See Shayegan for more on the specifics of this shift ("The transmission of Greek philosophy to the Islamic world," 187-188). See also Wisnovsky, who calls this reorientation the "Ammonian Synthesis" (*Avicenna's Metaphysics in Context,* 3).

[44] Riccardo Chiaradonna and Adrien Lecert, "Iamblichus," *The Stanford Encyclopedia of Philosophy* (Fall 2019), https://plato.stanford.edu/archives/fall2019/entries/iamblichus.

[45] Robert Wisnovsky, "Avicenna and the Avicennian tradition*,*" in *The Cambridge Companion to Arabic Philosophy*, eds. Peter Adamson and Richard Taylor (Cambridge: Cambridge University Press, 2006), 20. See Lorenz for a description of the Aristotelian and Platonic differences regarding the nature of the human soul (Hendrix Lorenz, "Ancient theories of Soul." *The Stanford Encyclopedia of Philosophy* (Summer 2009), https://plato.stanford.edu/archives/sum2009/entries/ancient-soul).For the metaphysical differences between Plato and Aristotle regarding matter and form, see Ainsworth ("Form vs. matter," *The Stanford Encyclopedia of Philosophy* (Summer 2020), https://plato.stanford.edu/archives/sum2020/entries/form-matter). For the differences between Plato's Demiurge and Aristotle's Unmoved Mover, see Shayegan ("The transmission of Greek philosophy to the Islamic world," 187-190).

in 641 CE.[46] The philosophical interests early Islamic philosophers, including al-Fārābī and Yaḥyā, reflect Ammonius' synthesizing curriculum.[47]

Yaḥyā thus lived in a Baghdad which, intellectually speaking, was influenced by the pedagogic traditions of Late Antiquity, and in particular those of Byzantine Alexandria. One may even argue that, in terms of learning, Baghdad was to the Abbasid empire what Alexandria was to late Byzantium. Some scholars, such as O'Leary and Watt consider the philosophical currents in Abbasid Baghdad to be in many ways a direct continuation of those found in Alexandria. Some scholars thus speak of a "transfer" of Greek learning and wisdom from Alexandria to Baghdad.[48]

Concerning Yaḥyā's own training in Baghdad, we know from the bio-bibliographers that Abū Bishr and al-Fārābī were his principle instructors in logic and philosophy, although the link between Abū Bishr and Yaḥyā is stronger than that between al-Fārābī and Yaḥyā.[49] The biobibliographers al-Qifṭī and Ibn al-ʿIbrī tell us that Yaḥyā was the best [afḍal] of al-Fārābī's students.[50] Al-Tawḥīdī (d. 1023 CE), one of Yaḥyā's contemporary biobibliographers and students, writes that "he did not know any living authority in philosophy and logic except the Baghdad Christian Abū Zakariyyā."[51] We know that after the death of Abū Bishr in 940 CE

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[46] Damascius' biographical *Life of Isidore* is also the chief source of details concerning his teacher's Ammonius' life (Blank, *Ammonius*). Peters, "The Greek and Syriac background," 98-99.

[47] For how Al-Fārābī continued this trend towards harmonization; see Fakhry ("Al-Farabi and the reconciliation of Plato and Aristotle." *Journal of the History of Ideas* 26, no. 4 [1965]: 469-78. doi:10.2307/2708494).

[48] Lacy O'Leary, *Arabic Thought* (London: Routledge, 1922), 9; John Watt, "The Syriac Aristotelian tradition and the Syro-Arabic Baghdad philosophers," *Islamic History and Civilization* 124 (2016): 12-15. Islamic thinkers themselves, such as al-Fārābī, reinforced such a historical narrative, although some modern scholars warn us that such a narrative should be accepted in general terms and not in detail because Islamic thinkers were themselves to keen to project Baghdad as the new Alexandria in terms of cultural sophistication and scholarly prowess (Damien Janos, "Active nature" and other striking features of Abū Bishr Mattā ibn Yūnus's cosmology as reconstructed from his commentary on Aristotle's Physics," in *Ideas in Motion in Baghdad and Beyond*: *Philosophical and Theological Exchanges between Christians and Muslims in the Third/Ninth and Fourth/Tenth Centuries*, ed. Damien Janos (Leiden: Brill, 2015), 136; Shayegan, "The transmission of Greek philosophy to the Islamic world," 181).

[49] Gerhard Endress and Cleophea Ferrari, "The Baghdad Aristotelians," in *Philosophy in the Islamic World*, eds. Ulrich Rudolph, Rotraud Hansberger, and Peter Adamson (Leiden: Brill, 2017), 431-432.

[50] Jamāl al-Dīn al-Qifṭī, *Ta'rīkh al-Ḥukamā,'* ed. Julius Lippert (Leipzig: Dieterich'sche Verlagsbuchhandlung, 1903), 90; Abū al-Faraj ibn al-ʿIbrī, (lat. Gregory Bar Hebraeus), *Ta'rīkh mukhtaṣar al-duwal*, ed. Antun Salihani (Beirut: Maṭbaʿah al-Kaṯūlīkiyya, 1890), 170.

[51] Abū Ḥayyan ʿAlī b. Muḥammad al-Tawḥīdī, *Kitāb al-Imtāʿ wa-l-Muʾānasa*, ed. Aḥmad Amīn and Aḥmad al-Zayn (Cairo, 1939-1944), 122; Endress and Ferrari, "The Baghdad Aristotelians," 440.

Yaḥyā succeeded as the leader/director of the philosophical academy in Baghdad.[52] Yaḥyā headed the school at Baghdad for several decades until his death in 974 CE. Several of his students, such as Abū Sulaymān al-Sijistānī (d. 1000 CE) and Abū Ḥayyān al-Tawḥīdī, went on to be accomplished thinkers and teachers in their own right.[53] Yaḥyā was an avid copyist and bookseller in addition to being a distinguished logician, theologian, and translator.[54] This is most probably how he earned his living and also a means by which he was able to gain access to the texts which he transcribed, translated and commented on.[55] He likely knew little Greek, but was fluent in Syriac, basing his Arabic translations on Syriac versions of the Greek texts.[56] Tawḥīdī offers a list of Yaḥyā's companions and colleagues. Given that this list includes logicians and philosophers but also astronomers and physicians, it is likely that Yaḥyā had some familiarity with these subjects, if only through his work as a copyist and a bookseller.[57]

The lists of Yaḥyā's works present in the bio-bibliographers' entries show that Yaḥyā was an active Syriac-Arabic translator, peripatetic philosopher, and theologian. One can count over 50 works ranging in topic from metaphysics to logic to ethics to theology. These works include complete commentaries on the six logical works of Aristotle's *Organon*, a commentary on Aristotle's *Physics* and *Metaphysics* α.[58] In addition to these commentaries, the bio-bibliographers attribute to Yaḥyā a number of philosophical and mathematical treatises regarding the *Categories,* the Aristotelian syllogism, mereology (the relation of parts to wholes), the nature of infinity and the nature of motion.[59] Concerning his theological works, Yaḥyā composed several Christian apologetic works regarding the nature of the Trinity as well as on the truth of the Gospel and the nature of God's incarnation in Christ. For example, he composed the

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[52] Al-Fārābī had by this point already left Baghdad for Aleppo. Muhammad Omar, "The life of Yahya Ibn 'Adi: a famous Christian philosopher of Baghdad*" Mediterranean Journal of Social Sciences* 6, no. 2 (2015): 310.
[53] Ian Richard Netton, *Al-Fārābī and His School* (London: Routledge, 1992), 14-16.
[54] Omar, "The life of Yahya Ibn 'Adi: a Famous Christian philosopher of Baghdad," 309-310; "Yaḥyā Ibn 'Adī," in *Philosophy in the Islamic World*, eds. Rudolph, Ulrich, Rotraud E Hansberger, and Peter Adamson, 434-467 (Leiden; Boston, 2017), 440-1.
[55] i.e. transcribed, translated, commented on.
[56] Omar, "The life of Yahya Ibn 'Adi," 310. Very few Greek texts were translated directly into Arabic; the majority of the Arabic translations were based on Syriac translations undertaken at the late Antiquity learning institutions (D'Ancona, "Greek sources in Arabic and Islamic philosophy)."
[57] "The life of Yahya Ibn 'Adi," 310.
[58] Gerhard Endress, *The Works of Yahya Ibn 'Adi: An Analytical Inventory* (Wiesbaden: Reichert, 1977), viii.
[59] Endress, *The Works of Yahya Ibn 'Adi: An Analytical Inventory*, x.

Exposition of the Error of Abū Yūsuf Yaʿqūb ibn Isḥāq al-Kindī, in his Treatise 'A Rebuttal of the Christians' (Tabyīn Ghalaṭ Abī Yūsuf Yaʿqūb ibn Isḥāq al-Kindī fī Maqālatihi fī al-Radd ʿalā al-Naṣārā) in which Yaḥyā defends a trinitarian God against the arguments put forth by al-Kindī in a lost treatise.[60] In addition to these apologetic texts, Yaḥyā produced exegetical works on the gospels of Luke, Matthew, John, and Mark and on the book of Deuteronomy. Yaḥyā was an accomplished translator, translating Plato's *Laws* and *Timaeus* in addition to Aristotle's *Categories, Topics, Metaphysics, On the Soul, Poetics,* and *Physics*. He also translated a number of Alexander of Aphrodisias' (fl. 200 CE) Aristotelian commentaries, including those on the *Categories* and the *Physics*. In ethics, Yaḥyā composed the influential *Tahdhīb al-Akhlāq* (*The Refinement of Morals*).[61]

III.   Literature Review

With a general overview of Yaḥyā's life and texts complete, we turn to presenting the current state of Yaḥyā studies in the West and how the present project aims to advance them. When compared to his contemporary al-Fārābī, Yaḥyā has been relatively overlooked. Modern scholarship has largely focused on Yaḥyā's theological treatises while little attention has been paid to examine his more philosophical ones. There are four scholars whose works have thus far shaped the Western study on Yaḥyā. The first is Augustine Périer, whose 1920 doctoral dissertation represents the first serious Western foray into the life and works of Yaḥyā. Périer's work focuses on presenting Yaḥyā as an apologetic Christian aiming to defend Christianity against the arguments of his Muslim peers, while preserving the Aristotelianism of his intellectual milieu. The dissertation is pioneering in its attempt to create an inventory of Yaḥyā's texts, the majority of which in Périer's time were available only in manuscript form.[62] Périer then published a (recently reprinted) complement to his dissertation in the same year, *Petits traités apologétiques de Yaḥyā ben 'Adî* [Short Apologetic Treatises of Yaḥyā ibn ʿAdī], in which he critically edits and translates a number of Yaḥyā's treatises that explain and defend

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[60] Netton, *Al-Fārābī and his school,* 10. See also Peter Adamson and Peter Pormann, *The Philosophical Works of Al-Kindī* (Oxford: Oxford University Press, 2012).

[61] Endress, *The Works of Yahya Ibn 'Adi: An Analytical Inventory*, xi-xiii.

[62] Périer, Augustin Periér, "Yahyâ Ben ʿadî : Un philosophe Arabe Chrétien du Xe Siècle," (PhD dissertation, Université de Paris, 1920.

Monophysitism against primarily Nestorian attacks.[63] Despite Périer's initial effort, studies on Yaḥyā were few and far between until Gerhard Endress' (1977) *The Works of Yaḥyā Ibn 'Adi: An Analytical Inventory*. Expanding on Périer's dissertation, Endress gathered and presented in one place all editions, manuscripts, and translations of Yaḥyā that were available to him at that time. To this day, Endress' work represents the most thorough resource concerning which Yaḥyā's texts have survived and where to find them. In 1988, Sahban Khalifat published the *Philosophical Treatises of Yaḥyā ibn 'Adī* [*Maqālāt Yaḥyā Ibn 'Adī al-Falsafiyya*] which provided editions and short analyses of many of the texts catalogued in Endress's inventory.[64] It represents an important resource for the present project in that it is the largest collection of editions of Yaḥyā texts. The text we will examine here, *Risāla fī Ithbāt Ṭabī'at al-Mumkin,* was first critically edited in this volume. In 1989, Carl Ehrig-Eggert, one of Endress' students, published his own edition of the treatise, complementing and revising the one found in Khalifat's book.[65] The next year, Ehrig-Eggert published a German translation of and commentary on the treatise.[66]

Since Khalifat and Ehrig-Eggert's works, articles about different aspects of Yaḥyā's philosophy sporadically appeared. In 2003, Olga Lizzini wrote an article comparing and contrasting Yaḥyā's views on unity put forth in his *Treatise on Unity* [*Maqāla fī al-Tawḥīd*] with those of Avicenna put forth in the *Metaphysics* of the *Shifā'*; she examines the manners in which these two philosophers depart from a common Aristotelian base in order to develop and motivate two very different accounts of unity.[67] Adamson's article about al-Fārābī's treatment of *De Interpretatione* IX mentions Yaḥyā's treatise on contingency in a footnote.[68] Marwan Rashed published an article analyzes Yaḥyā's strong realism in relation to Avicenna's later staunch

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[63] Augustin Périer, *Petits Traités Apologétiques de Yahya ben Adi (Maqālāt li-Yahya ibn Adi)* (Paris : J. Gabalda, 1920). For more on the different sects of Christianity represented in Late Byzantium and the conflicts between them, see O'Leary (*Arabic Thought*, 28-34).

[64] Sahban Khalifat, *Maqālāt Yaḥya Ibn 'Adī al-Falsafiyya* (Amman: University of Jordan Press, 1988).

[65] Carl Ehrig-Eggert, "Yaḥyā ibn 'Adī: Uber den Nachweis der Natur des Möglichen," 283-264.

[66] Carl Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn 'Adī* (Frankfurt am Main: Institut für Geschichte der Arabisch-Islamischen Wissenschaften, 1990).

[67] Olga Lizzini, "Le traité sur l'unité de Yahya Ibn Adi et la troisième maqālah de la métaphysique du kitab al-sifa d'Avicenne : deux finalités différentes dans l'analyse de l'Un," *Parole de l'Orient* 28 (2003): 497-529.

[68] Peter Adamson, "The Arabic sea battle: al-Fārābī on the problem of future contingents," 170-1.

nominalism concerning the ontological status of essences.[69] David Reisman and John McGinnis translated a large section of Yaḥyā's *Risāla fī Ithbāt Ṭabī'at al-Mumkin* in 2007.[70] Their work provides little historical contextualization and no analysis of the text. In 2012, Robert Wisnovsky published a supplement to Endress' inventory including new Yaḥyā texts he had discovered in the library of the Marwī madrasa in Tehran. This was a notable discovery in that it has effectively doubled the number of available Yaḥyā texts.[71] In 2017, Wisnovsky and Stephen Menn edited and translated one of the Marwī texts in which Yaḥyā discusses a debate concerning whether substance ought to fall under the category of substance or quantity. This article represents the most recent piece of literature on Yaḥyā's metaphysics.[72] With the exception of Ehrig-Eggert's translation and commentary, it is not until relatively recently that scholars have started to look at Yaḥyā's non-theological treatises and examine Yaḥyā as a peripatetic philosopher as opposed to focusing primarily on Yaḥyā as a Christian theologian.

From the works presented, it is Khalifat's editions, Ehrig-Eggert's article and book, and Reisman and Mcginnis' translation which are most relevant to the current project. Khalifat provides a critical edition of the treatise we will examine, Ehrig-Eggert provides an edition in addition to a German translation with commentar, and Mcginnis and Reisman provide an English translation. The present thesis contributes to scholarship on Yaḥyā by being the first analysis of *Risāla fī Ithbāt Ṭabī'at al-Mumkin* in English*,* as well as the first work to focus on Yaḥyā's treatment of the problem of divine foreknowledge. We have included our own translation of Yaḥyā's treatise in the appendix. This represents the first complete English translation of the text.

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[69] While Yaḥyā, like Porphyry, sought to establish essences as independently existent, Avicenna, according to Rashed, sought to argue that although essences can exist in the mind as well as in the things in which they are essences of (i.e. the essence of horse as existent in horses) they do not independently exist in themselves. Marwan Rashed, "Ibn Adi et Avicenne : sur les types d'existants, in *Aristotele e i suoi esegeti neoplatonici*, eds. V. Celluprica and C. D'Ancona (Naples, Bibliopolis, 2004), 107-171.

[70] John Mcginnis and David Reisman, *Classical Arabic Philosophy : An Anthology of Sources* (Indianapolis: Hackett, 2007), 128-138.

[71] Robert Wisnovsky, "New philosophical texts of Yaḥya Ibn 'Adī : a supplement to Endress' analytical inventory," *Islamic Philosophy, Theology and Science: Texts and Studies* 83 (2012), 90-91; Robert Wisnovsky, "MS Tehran-Madrasa-Yi Marwī 19: An 11th/17th-Century Codex of Classical Falsafah, Including 'Lost' Works by Yaḥyā Ibn ʿAdī (d. 363/974)," *Journal of Islamic Manuscripts* 7, no. 1 (2016): 89–122.

[72] Stephen Menn and Robert Wisnovsky, "Yaḥyā ibn ʿAdī and Ibrāhīm ibn ʿAdī: On whether body is a substance or a quantity: Introduction, Editio Princeps and Translation," *Arabic Sciences and Philosophy* 27, no. 1 (2017): 1–74, doi:10.1017/S0957423916000096.

IV.   Historiographical Concerns

In this section, we discuss some of the historiographical issues regarding the study of Islamic philosophy, and how our discussion hopes to navigate them. These issues become particularly relevant when examining non-Muslim thinkers, such as Yaḥyā, who lived and wrote in Islamic milieus.

When compared to the research undertaken on medieval European philosophy or Ancient philosophy, the state of Islamic philosophy in the West remains relatively inchoate. As Wisnovsky noted in 2004, fewer than 10% of the extant Islamic philosophical texts dating between the 13th and 18th centuries have been edited from their manuscript form, let alone translated or studied.[73] Nasr notes that there is still a "dearth of critical editions of Islamic philosophical texts," and that no Islamic philosopher has yet had all of their texts edited.[74]

This situation is due to a number of obstacles faced by the Western student of Islamic philosophy. Among these is the linguistic barrier. Critical study of Islamic philosophy requires advanced knowledge of Classical Arabic, its Semitic roots, and its technical philosophical lexicon domain quite foreign to the Western scholar most comfortable in romance and germanic languages with their Indo-European origins. In addition to a robust knowledge of Classical Arabic, at least a working knowledge of Ancient Greek and sometimes Latin is useful if not required, as the story of Islamic philosophy includes a reception of Greek philosophy as well as a subsequent transmission to Latin scholastic philosophy.[75] Finally, a consequential portion of the post-Avicennian philosophical corpus is composed in Persian, further adding to the linguistic complexity.[76]

Secondly, the study of Islamic philosophy in the West is still recovering from a damaging orientalism that has affected the field from its inception. This orientalism is evident in some of the pioneering works of the field. For example in Ernest Rénan's *Averroès et l'averroïsme*, one

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[73] Robert Wisnovsky, "The nature and scope of Arabic philosophical commentary in post-classical (ca. 1100-1900 AD) Islamic intellectual history: some preliminary observations," *Bulletin of the Institute of Classical Studies. Supplement*, no. 83 (2004): 160.

[74] Seyyed Hossein Nasr, "Introduction," in *History of Islamic Philosophy*, eds. Seyyed Hossein Nasr and Oliver Leaman (London: Routledge, 1996), 49.

[75] O'Leary, *Arabic Thought*, 1.

[76] Oliver Leaman, "Introduction," in *History of Islamic Philosophy*, eds. Seyyed Hossein Nasr and Oliver Leaman (London: Routledge, 1996), 27.

reads the racial belief that only "pure, classical" Greece had the capacity to produce philosophy; the Semitic thinkers were, on Rénan's view, racially unfit for the doing of philosophy.[77] Their contribution was the translation and preservation of Ancient Greek philosophy for later recovery by the Latin Renaissance thinkers. The Renaissance itself is only of cultural and intellectual value since it reinvigorates the "civilized" culture of Antiquity.[78] The Arabic-speaking philosophers under such a historiographical paradigm are cast primarily as imitators and philological bridges. Other early influential Western works on Islamic philosophy such as Tjitze de Boer's *Geschichte der Philosophie im Islam* (*History of Philosophy in Islam*) (1903, 6-7) also echoed and reinforced this view that sees Islamic philosophy as a mere vehicle of transmission not particularly worthy of examination in itself.[79] These early works furthermore seeded the notion that Islamic philosophy ended abruptly with Averroes (Arabic: Ibn Rushd, d. 1198), never fully recovering from the anti-philosophical blows dealt by the 12th century theologian al-Ghazālī (d. 1111). This historiographical paradigm, so well entrenched in the pioneering works of the field, would continue to affect its development well into the 20th century.[80] It is not until relatively recently that scholars have reconsidered al-Ghazālī as himself a member of the Islamic philosophical tradition, albeit a critical and reformist one.[81]

Despite having eventually overcome the effects of this orientalism on the study of Islamic thought, another controversy brought about a third obstacle to the growth of the field. This controversy was a veritable historiographical schism which still represents a source of concern today. Between 1960 and 1980, certain scholars such as Seyyed Hossein Nasr and Henry Corbin produced highly influential and well-received works on Islamic philosophy which showed that Islamic philosophy did not perish with Averroes in the 13th century.[82] Rejecting the older,

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[77] Ernest Rénan, *Averroès et l'averroïsme* (Paris: Durand, 1852), III.

[78] Rénan, *Averroès et l'averroïsme*, V-VI.

[79] Tjitze de Boer, *Geschichte der Philosophie im Islam = History of Philosophy in Islam*, trans. Edward R. Jones. (London, 1903), 6-7.

[80] Muhammad Ali Khalidi. *Medieval Islamic Philosophical Writings*, (Cambridge: Cambridge University Press, 2008), 24-25; Nasr, "Introduction," 46.

[81] Frank Griffel, *Al-Ghazâlî's Philosophical Theology* (Oxford: Oxford University Press, 2009).

[82] See, among others, Henry Corbin, Seyyed Hossein Nasr, and Omar Yahya *Histoire De La Philosophie Islamique* (Paris: Gallimard, 1964), Seyyed Hossein Nasr, *Three Muslim Sages: Avicenna—Suhrawardi—Ibn Arabi* (Delmar, New York: Caravan Books, 1964), Seyyed Hossain Nasr, *Islamic Philosophy from Its Origin to the Present: Philosophy in the Land of Prophecy* (Albany: State University of New York Press, 2006).

orientalist view which placed Averroes as the centerpiece and culminating point of Islamic philosophy (due to his perceived loyalty to Aristotelianism and his influence on medieval European philosophy), these scholars considered Avicenna to represent the intellectual zenith of the Islamic philosophical tradition; through him the Islamic reception and synthesis of Greek thought was complete and a new chapter in the history of Islamic philosophy opened. Nasr and Corbin's centralization of Avicenna was not particularly controversial then nor is it now.[83] What was controversial and novel in Corbin and Nasr's approach was the "orientalization," mystification, and "Islamification" of Avicenna, and in turn of Islamic philosophy as a whole. As opposed to reading Avicenna as an innovative peripatetic philosopher anchored in the metaphysical and rational frameworks of his Greek predecessors, scholars such as Corbin and Nasr considered Avicenna's ultimate project as being at its core distinctly mystical, religious, non-rational, and ultimately dedicated to the development of a transcendental and 'oriental theosophy' which, although based in the prophetic wisdom of Islam, ultimately blooms into an all-encompassing transcendental "perennial" philosophy.[84] They read the whole of Islamic philosophy as one rooted in the prophetic wisdom (*ḥikma*) of the Quran and *ḥadīth*, with Avicenna marking its zenith.[85] This is part of the reason why they prefer the phrase "Islamic philosophy" to the phrase "Arabic philosophy."

In such a historiographical framework, Avicenna's technical peripateticism becomes merely symbolic language for this underlying esoteric project. This has the powerful consequence of essentially de-Hellenizing Avicenna, and with it the Islamic philosophical tradition as a whole. For Nasr and Corbin, Avicenna's more mystical texts disown "his own earlier peripatetic works as being for the common crowd."[86] They believe that in the mystical

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[83] Dimitri Gutas, "The heritage of Avicenna: The golden age of Arabic philosophy, 1000-ca. 1350," in *Avicenna and His Heritage*, ed. J.L. Janssens and D. De Smet (Leuven: Leuven University Press, 2002), 81-97; Fakhry, *History of Islamic Philosophy*, 132-135.

[84] Corbin, Nasr, and Yahya, *Histoire De La Philosophie Islamique*, 242 ; Seyyed Hossein Nasr, *An Introduction to Islamic Cosmological Doctrines* (London: Thames, 1978), 191.
See also Corbin (*En Islam Iranien*, Paris: Gallimard, 1971) for more on this Islamicized and Twelver Shi'ite approach to Islamic philosophy.

[85] Nasr, *An Introduction to Islamic Cosmological Doctrines*, 52; Corbin, Nasr, and Yahya, *Histoire De La Philosophie Islamique*, 28-30.

[86] Nasr, *An Introduction to Islamic Cosmological Doctrines*, 52; Corbin, Nasr, and Yahya, *Histoire De La Philosophie Islamique*, 186.

works, Avicenna "expose[s] his real views."[87] That is, we should not read Avicenna's peripatetic works at face value; instead they ought to be read symbolically against the backdrop of Avicenna's ultimate culminating goal, the establishment of a perennial theosophy that is mystic, oriental, and Islamic. Nasr writes that:

> A close study of the 'esoteric' writings of Ibn Sina will reveal that the 'Oriental Philosophy' is not at all a philosophy in the rationalistic sense, nor a system of dialectic to fulfill certain mental needs; rather it is a form of wisdom or 'theosophy ... Its language is there primarily symbolic rather than dialectical even if it begins with Aristotlian logic and employs some of the cosmological ideas of the Peripatetic philosophers.[88]

Other scholars, such as Dimitri Gutas, Jules Janssens, Tony Street, and Nicholas Rescher wholeheartedly reject Nasr and Corbin's attempts to Islamicize and mystify Avicenna and with it the Islamic philosophical tradition. For this school of thought, the core of Avicenna's project is grounded in the intellectual frameworks of Ancient Greece; there is no esoteric 'oriental' thought which runs through and grounds the Avicennian worldview.[89] Rescher writes that, "Arabic logic has nothing to do with 'Oriental Philosophy'; like the rest of Arabic science and philosophy it is entirely "Western," because it developed entirely in the Greek tradition."[90] Street affirms that the logic of al-Fārābī and Yaḥyā is best considered as "Arabic" logic, since the "Islamic-ness" of Arabic logic concerns only the fact that it was studied under the political control of an Islamic government and the fact that it was eventually (after the 13th century CE) integrated into the religious seminary madrasa curriculum.[91] These observations are not significant enough to merit labelling the entire tradition "Islamic," but since Arabic was the chosen scholarly language of the vast majority of Islamic philosophers for nearly a millennium, Street prefers the phrase "Arabic

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[87] Ibid.

[88] Nasr, *An Introduction to Islamic Cosmological Doctrines*, 52; Corbin, Nasr, and Yahya, *Histoire De La Philosophie Islamique*, 191.

[89] Dimitri Gutas, "Ibn Sina [Avicenna]," *The Stanford Encyclopedia of Philosophy* (Fall 2016), https://plato.stanford.edu/archives/fall2016/entries/ibn-sina; *Avicenna and the Aristotelian Tradition* (London: Brill, 2014), XXI-XXIII; Jules L. Janssen, *Ibn Sīnā and his Influence on the Arabic and Latin world* (Aldershot: Ashgate, 2006), 37.

[90] Rescher, *The Development of Arabic Logic,* 15.

[91] Street, "Arabic and Islamic philosophy of language and logic," *The Stanford Encyclopedia of Philosophy* (Spring 2015), https://plato.stanford.edu/archives/spr2015/entries/arabic-islamic-language.

logic."[92] Gutas believes that Nasr and Corbin"s attempts to Islamicize the whole of Islamic philosophy "raises the question of the autonomy of philosophy as an intellectual pursuit in Islamic societies."[93] Calling the philosophy done in the Islamic world "Islamic" "reduces all intellectual pursuit to a common and undifferentiated denominator in which everything becomes interchangeable: the Qur'an and the *ḥadīth* becomes 'philosophy,' and so do theology and mysticism." It is for this reason that Gutas also prefers the phrase 'Arabic philosophy' to 'Islamic philosophy.'

This problem remains relevant. Should we read Islamic or Arabic philosophy as an intellectual endeavor ultimately inspired by the prophetic wisdom of the Quran and the *aḥādīth*, as Corbin and Nasr would have it? Or, should we be more sympathetic to those like Gutas, Jansenns, and Street, who see the Islamic philosophical tradition as an innovative continuation of the intellectual currents of Ancient Greece?

The full treatment of this issue lies outside the scope of the present project. It is nevertheless relevant to note that, at least in the case of Yaḥyā and his views on the nature of contingency, it would be clearly misguided to label him as an Islamic philosopher doing Islamic philosophy. As we will see, Yaḥyā's motivation as a thinker is not rooted in a prophetic wisdom stemming from the Qur'ān or the *aḥādīth*. Yaḥyā's identity is two-fold. On one end, he is a peripatetic commentator with Neoplatonizing tendencies who is most clearly connected to the late-antique intellectual tradition. In this sense his work may be understood as a continuation of the intellectual trends established by Alexander of Aphrodisias (fl. ca. 200 CE), and developed by such thinkers as Porphyry (d. 305 CE), Proclus (d. 485 CE) and Ammonius (d. 520 AD). There is nothing Islamic about these traditions and intellectual currents; they are firmly grounded in Ancient Greek philosophical thought. In this sense there is no reason to consider Yaḥyā an Islamic thinker. Yaḥyā's second intellectual identity stems from his work as an apologetic Jacobite Christian theologian. Here Yaḥyā aims to defend Christian dogma against non-Jacobite (i.e. Nestorian) and Islamic doctrine. Again it would be misguided to consider Yaḥyā an Islamic

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[92] Street nuances this view, noting that, for example, the study of the modern logic of Frege or Russell in Arabic in contemporary universities is not to be considered 'Arabic' logic in the same way that the logic of Yaḥyā of al-Fārābī is to be considered "Arabic"; Street, "Arabic and Islamic philosophy of language and logic."
[93] Dimitri Gutas, "The heritage of Avicenna: The golden age of Arabic philosophy, 1000-ca. 1350," 83.

thinker. To the contrary, he sets out in numerous treatises to disprove Islamic doctrine in defense of Christian ideology.[94] Yaḥyā would not have been familiar with the Qur'ān nor the *aḥādīth* beyond what he would have learned in order to critique Islamic theological notions in favor of Christian ones. It would thus be unfair and incorrect to label him an Islamic thinker where "Islamic" is understood as "ultimately rooted in the Qur'an and the *aḥādīth*." He is a peripatetic Christian thinker with Neoplatonizing tendencies, not an Islamic one.

If matters were this simple, we would call him a Christian peripatetic thinker and move on, but this would belie the important continuity present between Yaḥyā and his Muslim predecessors, contemporaries, and successors. Yaḥyā takes part in a philosophical tradition dominated by Muslims; he influences them and is influenced by them. Whether it is the earlier al-Kindī (d. 870), the contemporary al-Fārābī or the later Avicenna (d. 1037), separating Yaḥyā from his Islamic milieu would be misrepresentative. There are three notable commonalities between Yahya and Muslims philosophers. First, they all used Arabic as the primary language of composition and transmission of their thought. Secondly, they all share an intellectual foundation in Ancient Greek philosophy and its late-antique reception. Thirdly, they all lived in sociopolitical environments established and ruled by Muslims.[95] Thus, the least problematic manner by which to understand Yaḥyā would be as an Christian Arabic philosopher living in Islamic civilization, where "Christian" refers to his faith and Christian theological beliefs, "Arabic" refers to the chosen language of the composition and transmission of his work, "Islamic" refers to his participation in a society and culture established and ruled by Muslims, and "philosopher" refers to his Greek intellectual roots.[96]

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[94] See for example the entry on *The Exposition of the Error of Abū Yūsuf Yaʻqūb ibn Isḥāq al-Kindī, in his Treatise 'A Rebuttal of the Christians' (Tabyīn Ghalaṭ Abī Yūsuf Yaʻqūb ibn Isḥāq al-Kindī fī Maqālatihi fī al-Radd ʻalá al-Naṣārā)* in Endress (*The Works of Yahya Ibn 'Adi: An Analytical Inventory*, 99). For a complete list of Yaḥyā's apologetic and polemic works, see Endress (ibid, x-xi). See also his *Maqālah fi al-Tawḥīd*, edited by Khalifat (*Maqālat Yaḥya Ibn ʻAdī al-Falsafiyya*, 375-406).

[95] i.e. within the Islamicate, to borrow a term from Hodgson (Marshall Hodgson, *The Venture of Islam: Conscience and History in a World Civilization*, 3 vols [Chicago: University of Chicago Press, 1974].

[96] As Gutas (*Greek Philosophers in the Arabic Tradition*, 4940) notes, the phrase 'Islamic civilization' or 'Islamic world' carries a cultural connotation as opposed to a religious one, since Islamic civilization included the unification of vast territories from Spain to Central Asia and refers to a culture that, although initially spread and ruled by Muslims, was also generated and cultivated by pagans, Christians, Zoroastrians, and Jews. When Nasr uses the term

As for the subject matter of this thesis, a full analysis of whether it is best understood as "Islamic philosophy," "Arabic philosophy," "Arab philosophy" or simply just "philosophy" is not our goal. But a cursory examination is in order. Firstly, the phrase "Islamic philosophy" would belie the diversity inherent in the Islamic philosophical tradition. Jewish scholars, such as Maimonides (d. 1204), and Christian scholars, such as Yaḥyā or Abū Bishr, played important and consequential roles in the development of Islamic philosophy. Secondly, the phrase "Arab philosophy," where "Arab" refers to the ethnic identity of the people of the Arabian Peninsula in the 6th/7th century CE, is equally problematic as the majority of Islamic thinkers were not ethnic Arabs. Al-Fārābī was likely of Turkic or Persian descent, Avicenna was Persian, and Averroes was Andalusian.[97] Furthermore, there is no clear link between the content of Islamic philosophy and the pre-Islamic Arab ethnocultural identity.[98]

It is important to note that, however, while Arabic philosophy may properly characterize the pre-Avicennian philosophical tradition (i.e. that of al-Kindī, Abū Bishr, al-Fārābī, Yaḥyā, etc.), matters are different in what concerns the post-Avicennian thinkers. First, in the post-Avicennian period, treatises on Aristotle essentially disappeared while commentaries, glosses, and superglosses on Avicenna's works became commonplace.[99] In this sense the focus on Aristotle was replaced by a focus on Avicenna and the direct textual link to antiquity was muddled. Second, the role of *kalām*, or Islamic doctrinal theology, is more pronounced in the post-Avicennian period; many of the key philosophical debates in the post-Avicennian period turn around more theological topics than they did before Avicenna.[100] It is for this reason that

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'Islamic,' he understands primarily religiously as indicating a link to the prophetic wisdom of the Quran and *aḥādīth* ("Introduction," 68-90).

[97] There-Anne Druart, "al-Farabi," *The Stanford Encyclopedia of Philosophy* (Fall 2020), <https://plato.stanford.edu/archives/fall2020/entries/al-farabi/>; Gutas, "Ibn Sina [Avicenna]"; Josép Puig Montada, "Ibn Rushd's natural philosophy," *The Stanford Encyclopedia of Philosophy* (Fall 2018), https://plato.stanford.edu/archives/fall2018/entries/ibn-rushd-natural/.

[98] Michael Lecker, "Pre-Islamic Arabia," in *The New Cambridge History of Islam*, ed. Chase F. Robinson (Cambridge: Cambridge University Press, 2010), 153-70.

[99] Gutas, "The heritage of Avicenna: the golden age of Arabic philosophy, 1000-ca. 1350," 83; Ahmed Al-Rahim, "The Twelver Shi'ite reception of Avicenna in the Mongol period," in *Before and After Avicenna: Proceedings of the First Conference of the Avicenna Study Grou*p, ed. David Reisman with the assistance of Ahmed al-Rahim (Leiden: Brill, 2003), 119; Robert Wisnovsky, "Avicenna's Islamic reception," in *Interpreting Avicenna: Critical Essays*, ed. Peter Adamson (Cambridge: Cambridge University Press, 2013), 190-213.

[100] For example, one of the hottest debates in the post-Avicennian period concerned the metaphysics of God's attributes; Amos Bertolacci, "Arabic and Islamic metaphysics," *The Stanford Encyclopedia of Philosophy* (Summer 2018), https://plato.stanford.edu/archives/sum2018/entries/arabic-islamic-metaphysics/.

scholars such as Wisnovsky write that post-Avicennian philosophy, with its increased focus on *kalām*, "emerged as a true Islamic philosophy, a synthesis of Avicenna's metaphysics and Muslim doctrine."[101] Third, the study of philosophy and logic in the post-Avicennian period was increasingly assimilated into the Islamic seminary and its religious curriculum.[102] Finally, the mysticism of certain hallmark post-Avicennian thinkers, such as Suhrawardi (d. 1191 CE) and Mullā Ṣadrā (d. 1640) contained a philosophy which was peripatetic and Neoplatonic in some ways but also distinctly Islamic and esoteric in others.[103]

  With these considerations it becomes clear that it would be unsatisfactory to group both the pre-Avicennian and the post-Avicennian philosophical traditions, which together encompass over a millennium, under the umbrella term "Arabic philosophy." It would also be misguided to consider them both "Islamic philosophy," if Islamic is understood as implying a link to the Quran and the *aḥādīth*. For our purposes here, we will use the phrase "Islamic" philosophy and "Islamic" thinker to describe Yaḥyā and the subjects which he studies, but we do not mean by Yaḥyā's being Islamic that his intellectual orientation or his domain of study has roots in the Quran or the *aḥadīth*. We rather align more with Hodgson and Gutas, using "Islamic" to indicate a participation in a civilization established and populated by Muslims.

  V. Conclusion

  This concludes the opening chapter of our discussion. In it we have accomplished four things. First, we presented and motivated the goal of the present thesis: a translation and analysis of the first six chapters of Yaḥyā ibn 'Adī's *Risāla fī Ithbāt Ṭabī'at al-Mumkin* [Treatise on the Reality of the Nature of the Contingent]. Our analysis will unpack Yaḥyā's discussion of the determinist proof from divine foreknowledge and contextualize it within the late-antique and Islamic philosophical traditions. We will make three main observations: first, Yaḥyā's innovative response to the problem of divine foreknowledge has two parts. The first part denies absolute

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[101] Wisnovsky, "*Avicenna and the Avicennian tradition*," 92.

[102] Street, "Arabic and Islamic philosophy of language and logic." See Endress for more on the institutional confluence of *kalām* and philosophy in the post-Avicennian period. Gerhard Endress ("Reading Avicenna in the Madrasa," in *Arabic Theology, Arabic Philosophy*, ed. James Montgomery (Leuven: Peeters Publishers and Department of Oriental Studies, 2006), 371-424).

[103] Roxanne Marcotte, "Suhrawardi," The Stanford Encyclopedia of Philosophy (Summer 2019), https://plato.stanford.edu/archives/sum2019/entries/suhrawardi; Sajjad Rizvi, "Mulla Sadra", *The Stanford Encyclopedia of Philosophy* (Spring 2019), https://plato.stanford.edu/archives/spr2019/entries/mulla-sadra/.

immutability to God's knowledge; it changes as a function of change in its objects. This idea might have its origins in Porphyry. The second part argues that the status of the knower need not correspond to the status of the object of knowledge; the former may be eternal while the latter is not. This is possibly from Iamblichus. Finally, Yaḥyā uses the Aristotelian distinction between simple and hypothetical necessity to explain why God's knowledge can necessitate things which are in themselves contingent.

Second, we discussed Yaḥyā's life and historical milieu, situating him within the peak of the Greco-Arabic translation movement, headquartered in 10th century CE Abbasid Baghdad. We noted that Yaḥyā was both an accomplished Aristotelian logician and Jacobite Christian theologian. We highlighted the continuities between the intellectual traditions of Yaḥyā's period and those of Hellenized late Antiquity, noting in particular the links between the philosophical currents of 5th/6th century Alexandria and Yaḥyā's Baghdad. We also examined the role of Late Antiquity as an intermediary between the early Islamic philosophers and the Ancient world; we highlighted the important impacts of the Christianization of the late Roman empire on the intellectual circles of Late Antiquity, and subsequently on the Islamic reception of Greek thought.

Thirdly, we provided a literature review of the scholarship produced on Yaḥyā, noting that his contribution to the development of pre-Avicennian Islamic philosophy, particularly in metaphysics and logic, has been on the whole overlooked. Fourthly, we offered a general overview of the state of Western study of Islamic philosophy, highlighting some of the historiographical controversies which affected and still continue to affect the field and which are relevant to our present project. We noted that we will use the phrases "Islamic philosopher" and "Islamic philosophy" when discussing Yaḥyā, but that by "Islamic," we do not intend that it originates in the Quran or the *aḥādīth*, but rather to highlight Yaḥyā's participation in a civilization established and dominated by Muslims. With these foundations established, we now focus on presenting Aristotle's *De Interpretatione* IX and tracing its reception through the late-antique and early medieval period.

Chapter 2: A History of the Problem of Divine Foreknowledge from Aristotle to Al-Fārābī

I.   Introduction

This chapter provides a sketch of the history of the problem of future contingents and the problem of divine foreknowledge from Aristotle (d. 322 BCE) to al-Fārābī (d. 950 CE). We will examine both problems, since they are conceptually and historically linked, although we will focus on the latter. We will consider the views of five authors preceding Yaḥyā: Aristotle, Boethius (d. 524 CE), Ammonius (d. ca. 526 CE), Stephanus (d. ca. 640 CE), and al-Fārābī. Our goal is to present the ways that these different thinkers approached and resolved the problems. Having this history in mind will enable us to better contextualize Yaḥyā's treatment of the problem of divine foreknowledge in Chapter 3. Given that this chapter is predominantly descriptive, we will structure it through a series of sections, each dedicated to one author.

II.   Aristotle (385-322 BCE)

Our first author is Aristotle, whose *De Interpretatione* provided subsequent thinkers the standard formulation for the problem of future contingents. Aristotle does not discuss the problem of divine foreknowledge in *De Interpretatione,* although it became standard in the commentatorial tradition to include a discussion of it. The themes of determinism vs. free will, and the relation of divine knowledge to worldly events are topics present in ancient Greek literature before Aristotle; however it is through Aristotle and the Aristotelian commentary tradition that a formalized discussion emerges.[104]

De Interpretatione is primarily concerned with exploring the nature of the proposition. [ἀπόφανσις]. It is the second book in the *Organon*, the six-book arrangement of (what ancient the commentators considered to be) Aristotle's logical works. It comes after the *Categories*

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[104] The proactive role of divine knowledge in human affairs is a theme in classical Greek mythology. Whether it is Athena's providential guidance of Odysseus and Ulysses in Homer or Prometheus' invention of arithmetic and writing for man in Aeschylus' *Prometheus Bound*, ancient culture is replete with prophecies and divine intervention. See Johnston and Struck (Sarah Iles Johnston, and Peter T Struck, *Religions in the Graeco-Roman World*, V. 155 [Leiden: Brill, 2005]) or Flower (Michael Flower, *The Seer in Ancient Greece* [Berkeley: University of California Press, 2008]) for more on divination in Greek culture. For how Greek and early Roman philosophers approached the efficacy of the divine, see Frede and Laks (André Laks and Dorothea Frede (eds.), *Traditions of Theology* [Leiden, The Netherlands: Brill, 2001]).

[Κατηγορίαι] which focuses on the building blocks of propositions, namely terms [ὅροι], and before the *Prior Analytics* [Ἀναλυτικὰ Πρότερα] which examines the ways in which propositions may form syllogisms [συλλογισμός].[105] In the chapters leading up to Chapter IX, Aristotle characterizes the spoken word [φωνή] as a token [σύμβολον] for mental experience, verbs [ῥῆμα] are that which "carry a notion of time," and they are always "a sign [σημεῖον] of something said of something else."[106] Sentences [λόγοι] are meaningful utterances [Φωνή σημαντική]. Propositions are declarative [αποφαντικός] sentences, i.e. those sentences which are accepting of truth or falsity and which predicate something of a subject, e.g. X is Y or Socrates is mortal.[107] Propositions can either be affirmations [κατάφασεις], which is the basic type of proposition, or negations [ἀπόφασεις]. Every affirmation (X is Y) has a corresponding negation (X is not Y). Taking the affirmation and anegation of the same predicate in relation to the same subject is a contradiction [αντίφασις, e.g. X is Y *and* X is not Y].[108] Contradictory pairs have a particular property: namely, the truth of one entails the falsity of the other, and vice versa. This means that they cannot both be true together, nor can they be false together.

In Chapter IX, Aristotle states that when it comes to propositions about what currently is [τὰ ὄντα], or what has occurred [γενόμενος], it is necessary [ἀνάγκη] that either the affirmation or the negation of the proposition be true [ἀληθῆ] or false [ψσευδῆ].[109] This is to say that truth and falsity are distributed between the members of a contradictory pair, given that the pair describes something in the present or the past. Take for example the contradictory pair "X is white" and "X is not white." One of these must be false, and the other must be true. It does not matter which one is the true one or which one is the false one, but they cannot both be

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[105] Whitaker, C. W. A. *Aristotle's De Interpretatione : Contradiction and Dialectic* (Oxford: Oxford University Press, 2002), 5.

[106] 16a1-18a280.

[107] Not all sentences are then propositions; Aristotle sets aside these types of non-propositional sentences to focus on propositions, saying that they are more appropriate for the study of rhetoric and poetry (17a).

[108] We are simplifying here; there are other conditions for a contradictory pair. For example, each member of the contradictory pair must deny or affirm the same predicate with respect to the same subject at the same time. Furthermore, the predicate used in each member of the contradictory pair must be univocal [μονοφωνικός], i.e. used with the same meaning. There are also conditions concerning the universality of the subject and predicate which we will not explore here. See Horn (Laurence Horn, "Contradiction," The Stanford Encyclopedia of Philosophy [Winter 2018], https://plato.stanford.edu/archives/win2018/entries/contradiction/) for more on contradiction in logic.

[109] 18a28-32.

simultaneously true, nor can they both be simultaneously false.[110]

  This, however, is not the case for propositions about the future [το μέλλον].[111] This is because if it were true that truth was definitely distributed for future propositions, then it would follow that every subject of a future proposition would either have to be or not to be whatever its predicate is, in the present.[112] Thus if two people were to each utter one member of a contradictory pair regarding the future, one would be speaking the truth, while the other would be speaking a falsehood. For example, regarding contradictory pairs about the past, if one person were to utter "X is Y" and the other uttered "X is not Y" then one of them would be right and the other wrong. It would be the same for contradictory pairs about the present. But if two people each utter a respective member of a contradictory pair regarding the future, and if each of them would be uttering a truth or a falsehood respectively, then it would follow that predicate's holding or not holding of the subject in the future is already settled, and this for Aristotle leads to a number of absurdities.

  Let us take the future contradictory pair "X will be white" and "X will not be white." If two people each utter one of these statements, one of them speaks the truth and the other speaks falsely. This is because the members of contradictory pairs cannot both be true or false together. It follows from this that one member of the pair is presently true, and the other presently false. This means that it is already determined in the present whether X will be actually white or not.[113]

  We can do this for any pair of propositions about the future, and it will follow that all propositions about the future have settled truth values in the present, and the occurrence or non-occurrence of the future events they describe is then already determined, since if "X will occur

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[110] This is one way to formulate what logicians call the Law of Non-contradiction, described here but more clearly developed in *Metaphysics* Γ, 3-6; Paula Gottlieb ("Aristotle on non-contradiction," *The Stanford Encyclopedia of Philosoph*y [Spring 2019], https://plato.stanford.edu/archives/spr2019/entries/aristotle-noncontradiction/.

[111] 18a33.

[112] This is because of the link alluded to between affirmative propositions and existence in *De Interpretatione* VI (17a25-32). To affirm 'X is Y' is to affirm that Y actually exists for X. This is one formulation of what has been called the correspondence theory of truth; for a proposition to be true is for it to correspond to actuality (i.e. if it is true that X is Y, then X actually is Y; if it is true that X will be Y, then X will actually be Y). See David ("The correspondence theory of truth," *The Stanford Encyclopedia of Philosophy* [Winter 2020], https://plato.stanford.edu/archives/win2020/entries/truth-correspondence/) for more on the correspondence theory of truth.

[113] This is because, as Aristotle explains at 18b1-5, the truth and falsity of propositions must correspond to proposition's real-world referents. This is the correspondence theory of truth just discussed.

tomorrow' is true then it follows that X will actually occur tomorrow. [114] Aristotle notes that it follows from this that nothing occurs by chance [ἀπὸ τύχης]; for whatever happens, it was already true before it happened that it would happen.[115] Nothing is contingent [ἐνδεχόμενον]. This is a form of logical determinism; the occurrence or non-occurrence of all events is pre-determined by the truth or falsity of the proposition that describes them. [116] There is no event which may or may not happen. Furthermore, there is no temporal limit to the true proposition's power to necessitate future events; if someone utters 10,000 years ago that there will be a sea-battle tomorrow, and their utterance is true, then the occurrence of tomorrow's sea-battle is necessitated from then until tomorrow's date.

Aristotle writes that such consequences are the sorts of absurdities [ἄτοποι] that follow if future contingent propositions have distributed truth values.[117] It is clear to him that there are things whose nature is such that the thing may or may not exist, i.e. contingent things, such that for them "the affirmation of each alternative is no more true than the denial of it" [καὶ ουδὲν μᾶλλον ἢ ἡ κατάφασις ἢ ἡ ἀποφασις ἀληθής].[118] It is necessary that one member of the contradictory pair be true, and the other false, but not one over the other.[119]

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[114] Technically speaking, we are concerned with assertoric propositions, i.e. those propositions which assert something of something else. This is in contrast with problematic propositions which deal with the probability of something being true of something else, and apodeictic propositions which involve necessary truths.

[115] 18b6-9.

[116] There are several types of determinism; we may take determinism to be the thesis that the occurrence or non-occurrence of all things is necessary. That is, nothing in the past, present, or future can be different from the way it already is. The two types of determinism most relevant to our discussion are causal determinism and logical determinism. The main difference between logical and causal determinism is the necessitating force which fixes the outcomes of all things. In logical determinism, things' necessity follows from the propositions that describe them. Because the proposition "it will rain tomorrow" is true, it follows that it will necessarily rain tomorrow. In causal determinism the necessitating force is (usually) understood as a series of initial conditions and natural laws. For example, because of the expected temperature, humidity, and barometric pressure over a given area and certain meteorological laws, it follows that it must rain tomorrow. We will discuss further the relationship of causal and logical determinism in Chapter 3. See Hoefer ("Causal determinism," *The Stanford Encyclopedia of Philosophy* [Spring 2016], https://plato.stanford.edu/archives/spr2016/entries/determinism-causal/) for more on causal determinism. For more on determinism in general, including logical determinism, see Berofsky (Bernard Berofsky, *Determinism* [Princeton: Princeton University Press, 1971]).

[117] Note that the problem only concerns propositions about the future which are contingent, i.e. not necessary. There is no problem for future necessary propositions. For example, it is non-problematic that it is true today that tomorrow the sum of the interior angles of a triangle in Euclidian space is 180 degrees. The issue concerns future contingent propositions, such as Zayd's walking to the market tomorrow, since (presumably) we accept that Zayd could go, or that he could not go, depending on whatever circumstances may arise.

[118] 19a20-21

[119] 19a35-38

This, in a nutshell, is the problem of future contingents. If we accept the Principle of Bivalence, and we grant that truth is distributed definitely between the members of a pair of contradictory propositions (by definitely we mean such that each member has one truth value and the other member has the other), then logical determinism follows. Aristotle thinks that this is impossible [ἀδύνατος], since there are many things that exist that have the possibility [δυνατὸν] to not have existed.

As for Aristotle's solution to the problem, there is much debate among Aristotelian interpreters and commentators— ancient, medieval, and modern — regarding how Aristotle treats the problem.[120] He has two options. Either he accepts logical determinism, which is utterly non-intuitive since for Aristotle it is obvious that there are contingent things; or he modifies the way we understand future contingent propositions.[121] Virtually all Aristotelian interpreters, ancient or modern, agree that Aristotle opts for the second option. The agreement more or less ends there.

One interpretation of how Aristotle reworks our understanding future contingent propositions, known as the standard solution, holds that Aristotle excludes future contingent propositions from the Principle of Bivalence. The Principle of Bivalence states that all assertoric propositions (i.e. propositions that predicate something of something else, e.g. X is Y) have exactly one truth value; they have a truth value of true, else they have a truth value of false.[122] There is no third truth value (i.e. assertoric propositions are not trivalent), nor can a proposition's truth value be undefined. The standard solution holds that for contradictory proposition pairs about contingent things in the future, it is not necessary that one member proposition be true and the other false. The truth value is undistributed; it is 'hovering' between the two member pairs, so to speak. It is not (yet) distributed between the members of the contradictory pair.[123] This

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[120] See Part 1 of Craig (*The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez* [Leiden: E.J. Brill, 1988] or Sorabji *(Necessity, Cause, and Blame*: *Perspectives on Aristotle's Theory* [Ithaca, N.Y.: Cornell University Press, 1980], 92-93) for an overview of the debate.

[121] 19a7-23

[122] Horn, "Contradiction."

[123] When the time comes, the proposition ceases to be about a future event but about a current one, and the truth values distribute between the member pairs. At this stage the proposition is no longer a future contingent but necessary proposition about the present. This is unproblematic since as we noted above, Aristotle accepts that propositions about present events are necessary.

means the future contingent propositions are not bivalent.[124] Such a reading of Aristotle has been defended primarily by Taylor, Kneale, Frede, and Gaskin.[125]

The other dominant interpretation is formulated (among modern scholars) most notably by G.E. Anscombe and defended in Rescher as well as Butler and Strang.[126] According to this "non-standard" interpretation, Aristotle does not exclude propositions about future contingent events from the Principle of Bivalence.[127] Such propositions do have bivalent truth values in the present, but their truth values do not entail the necessity of the occurrence or non-occurrence of the things they describe. That is to say that although one of the members of the contradictory pair is true and the other false, the event or the thing described by the future contingent proposition is still contingent. For example, Zayd's walking to the market tomorrow is a contingent event (one that could or could not occur). Adherents of the standard interpretation hold that truth is not yet distributed between the two members of the contradictory pair ("Zayd will walk to the market tomorrow" and "Zayd will not walk to the market tomorrow"). It is hovering between these two possibilities.

Adherents of the non-standard interpretation claim that truth is indeed distributed between the members of the contradictory pair such that one is true and the other false, but it is a type of non-deterministic truth that is particular to propositions about future contingent things

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[124] Past and present propositions are bivalent since they do have exactly one truth value. In this way the standard solution limits principle of bivalence to the two former, excluding future contingent propositions. Future necessary propositions are still bivalent under the standard solution.

[125] Richard Taylor, "The problem of future contingencies" *The Philosophical Review*, 66 (1957): 1–28; William and Martha Kneale, *The Development of Logic* (Oxford: Clarendon Press, 1962); Dorothea Frede, "The sea-battle reconsidered: A defence of the traditional interpretation," *Oxford Studies in Ancient Philosophy* 3 (1985): 31–87; Richard Gaskin, *The Sea Battle and the Master Argument* (Berlin, 1995); Richard Gaskin, "Fatalism, bivalence and the past," *The Philosophical Quarterly* (1950-) 48, no. 190 (1998): 83-88.

[126] Gertrude E. M. Anscombe, "Aristotle and the sea battle: De Interpretatione Chapter IX." *Mind* 65 (1956): 1–15; Nicholas Rescher, "An interpretation of Aristotle's doctrine of future contingency and excluded middle," in *Studies in the History of Arabic Logic*, ed. Nicholas Rescher (Pittsburgh: University of Pittsburgh Press, 1963), 43-54; Ronald Butler, "Aristotle's sea fight and three-valued logic," *The Philosophical Review* 64, no 2 (1955): 264–74; Colin Strang, "Aristotle and the sea battle," *Mind* 69, no. 276 (1960): 447–65.

[127] Although these are the two most common readings of Aristotle's solutions, there are others. See for example McKim ("Fatalism and the future: Aristotle's way out," *The Review of Metaphysics* 25, no. 1 [1971]: 80-111) and Broadie (*Passage and Possibility: a Study of Aristotle's Modal Concepts* [Oxford: Clarendon Press, 2003]) for interpretations that differ from the two discussed. See Hintikka (*Time & Necessity : Studies in Aristotle's Theory of Modality* [Oxford: Clarendon Press, 1973], 147-163)
for an interpretation where Aristotle does not deny the Law of the Excluded Middle nor the Principle of Bivalence for future contingent propositions.

and events. It is currently true that Zayd will or will not walk tomorrow (the truth values are distributed; they are not hovering), but this does not entail that Zayd's walking or non-walking tomorrow is necessary. One way to phrase this is that the non-standard solution separates truth from necessity when it comes to future contingent propositions; although it may be true today that Zayd will go for a walk tomorrow, the truth of the proposition does not entail the necessity of Zayd's walking. Future contingent propositions have non-deterministic (i.e. non-necessitating) truth-values. Hence it is possible that it be true today that Zayd walk to the market tomorrow, and thus Zayd will walk to the market tomorrow (via the correspondence theory of truth) but Zayd's walking tomorrow is still contingent, i.e. it could have been the case that he stayed home. The truth or falsity of the proposition tells us what will happen, not what must happen.

Before moving onto the next author in our historical review of *De Interpretatione* IX and its reception, it will be helpful to look at how Aristotle understands necessity (ἀνάγκη). When he writes at 18b15 that if each member of the contradictory pair has a definite truth value in the present, then "each [future] occurrence would always be such as to come to be of necessity" [ἄπαντα οὖν τὰ ἐσόμενα ἀναγκαῖον γενέσθαι], what does he mean by necessity? Aristotle does not present an account of necessity in *De Interpretatione*. For this we turn to *Metaphysics* V.5, where he distinguishes five senses in which something may be called necessary.[128] The first sense of necessity is that which a living thing needs in order to live, such as breathing and food for animals. The second sense of necessity is that which is required for the attainment of a good, such as how it is necessary that a sick person drink medicine if they are to be healed. The third sense of necessity is compulsion, i.e. that which stands in the way of choice or desire; I wanted to take a vacation, but I was compelled (it was necessary that) I stay home and work due to the need to pay my rent. The fourth sense of necessity is that which cannot be otherwise than how it is. This is presumably the necessity involved in simple mathematical and logical truths, or the rotational movements of the heavens. Aristotle writes that this is the basic type of necessity; the other senses of necessity "are somehow derived" from this one [καὶ κατὰ τοῦτο τὸ ἀναγκαῖον καὶ

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[128] Aristototle, *Metaphysics*, ed. Christopher Kirwan in *Metaphysics : Books [Gamma], [Delta], and [Epsilon]*, 2nd ed (Oxford: Clarendon Press), 1993. See Wisnovsky (*Avicenna's Metaphysics in Context,* 201) for a more detailed break down of *Metaphysics* V.1.

τᾶλλα λέγεταίπως ἅπαντα ἀναγκαῖα].[129] The fifth type of necessity is the necessity involved in syllogistic demonstration. This is the sort of necessity that requires that Socrates be mortal if Socrates is a man and all men are mortal.

Note the difference between the fourth type of necessity and the others. The fourth type of necessity is unconditioned; it is simple necessity. Something which is necessary in the fourth sense is necessary in the sense that it cannot be other than the way it is. All of the other types of necessity involve some additional relation or condition to render the necessitated thing necessary. For example, the first sense of necessity requires the need for life, the second requires the need for health; if organism X is to be healthy or to live, then it is necessary that it eat and drink. Types three and five are similar; if it is necessary that I pay my rent, then it is necessary that I work.[130] It is necessary that Socrates be mortal, if all men are mortal and Socrates is a man. This distinction, which Aristotle elsewhere refers to as one between simple [ἁπλῶς] necessity and hypothetical [ἐξ ὑποθέσεως] necessity, will influence virtually all late-antique discussions of necessity and causation. [131] We will see how it influences al-Fārābī and Yaḥyā in their discussions of *De Interpretatione* IX. It is also one of the origins for Avicenna's assertion that God is the only intrinsically, i.e. simply, necessary being [*wājib al-wujūd bi-nafsihi*].[132]

Aristotle, building upon the division of necessity into simple and hypothetical, distinguishes between what we may call "intrinsic" and "extrinsic" necessity. He uses the example of a conclusion to which one arrives means of a syllogism. This conclusion is necessary in the 5th sense above; but its necessity is not innate to it. It is not necessary that Socrates be mortal; the necessity is "conferred" to Socrates's being mortal by means of the syllogism's (true) premises that all men are mortal and Socrates is a man. Hence Aristotle writes that "among [necessary things], some of them have cause other than them for their necessity, but others do not [have a cause other than them for their necessity] rather through them other things are out of

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[129] 1015a35

[130] But if I need not need to pay my rent, perhaps because someone else pays it for me, then it would not be necessary that I work.

[131] See *Physics* 200a and *Parts of Animals* 1.1

[132] See, for example, 1.VI of the *Metaphysics* of the *Shifā* (Avicenna, *Al-Shifā', al-Ilāhiyyāt,* eds. Georges Anawati and Saʿīd Zāyid. *Vol. 1* [*Cairo: Wizārat al-Thaqāfa wa-l-Irshād al-Qawmī*, 1960]). See Chapters 10 and 11 in Wisnovsky (*Avicenna's Metaphysics in Context*) for a discussion of how Aristotle's views on necessity inform aspects of al-Fārābī and Avicenna's metaphysics.

necessity" [τῶν μὲν δὴ ἕτερον αἴτιον τοῦ ἀναγκαῖα εἶναι, τῶν δὲ οὐδέν, ἀλλὰ διὰ ταῦτα ἕτερά ἐστιν ἐξ ἀνάγκης].[133] Thus the necessary thing, in the fundamental sense (i.e. in the 4th sense), is the simple [ὥστε τὸ πρῶτον καὶ κυρίως ἀναγκαῖον τὸ ἁπλοῦν ἐστίν].[134] This means that ultimate necessity admits of no parts, no change, and no cause of its necessity.[135] With this understanding of necessity in hand, to what type of necessity does Aristotle refer in *De Interpretatione* IX? There is no immediately clear answer. Nevertheless, as we will see, the difference between simple and hypothetical necessity will play a pivotal role in how later thinkers formulate their solutions to the problem of future contingents and the problem of divine foreknowledge.

III.   Boethius (ca. 475 CE – ca. 526? CE)

Boethius was a Christian Roman senator, theologian, and philosopher. In the words of the Renaissance humanist Lorenzo Valla (d. 1457 CE), he is the "last of the Romans and the first of the Scholastics."[136] His Latin translations of Plato and Aristotle as well as his philosophical commentaries played an important role in the medieval Latin reception of ancient and late-antique philosophical thought.[137] Although Yaḥyā did not read Boethius, since there was no Latin-Arabic translation movement, Yaḥyā and Boethius likely shared access to works of influential Aristotelian interpreters, such as Porphyry. Examining Boethius will thus afford us a sharper image of the late-antique discussions surrounding De Interpretatione IX and the problem of divine foreknowledge, and this in turn will enable us to better contextualize their Arabic reception by Yaḥyā and al-Fārābī. Boethius composed two commentaries on *De*

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[133] 1015b9-11

[134] 1015b12-13

[135] In his commentary on the *Metaphysics*, Alexander of Aphrodisias (fl. ca. 200 CE), perhaps the most influential early Aristotelian commentator, relists the five types of necessity set out by Aristotle. When discussing the 4th type of necessity, that which Aristotle says applies to 'that which cannot be in any other way' [ἔτι τὸ μη ἐνδεκόμενον ἄλλως ἔκειν ἀναγκαῖόν φαμεν οὕτως ἔκειν; 1015b7-8], Alexander adds two terms; he describes the things which are necessary in this sense as that which is eternal and immutable [τὸ ἀίδιον και ἀμετάβλητον; 361.4-5]. He also echoes Aristotle's distinction between necessary things that have no cause for their necessity, and those that do (361.19-25) (Alexander of Aphrodisias, *On Aristotle's Metaphysics* in *Commentaria in Aristotelem Graeca,* ed. Michael Hayduck, vol. 1 [Berlin: George Reimer, 1881], trans. W. E Dooley and Arthur Madigan, *Ancient Commentators on Aristotle* [Ithaca, N.Y.: Cornell University Press, 198]). See Sharples ("Alexander of Aphrodisias, De Fato: some parallels," *The Classical Quarterly* 8, no. 2 [1978]: 243–66) for more on Alexander's conception of necessity.

[136] Edmund Reiss, *Boethius* (Boston: Twayne, 1982).

[137] John Marenbon, "Anicius Manlius Severinus Boethius," *The Stanford Encyclopedia of Philosophy* (Winter 2016), https://plato.stanford.edu/archives/win2016/entries/boethius/.

Interpretatione.[138] He discusses the problem of divine foreknowledge in his magnum opus, the *Consolation of Philosophy* [*De consolatione philosophiae*].[139] It is generally accepted that Boethius' primary influence for his commentaries on *De Interpretatione* was Porphyry (d. 305 CE).[140] Given that our primary interest is the problem of divine foreknowledge, we will not say much about his treatment of the problem of future contingents beyond that a) his solution is configured in terms of definite and indefinite truth and that b) there is no consensus regarding what Boethius means by these terms.

It seems that Boethius takes definite truth to be deterministic and incompatible with contingency; if X is definitely true then X is necessarily the case. Indefinite truth, on the other hand, is compatible with contingency; if X's truth value is indefinite then then X is not necessarily the case (i.e., it could or could not be). Some scholars read Boethius in line with the standard interpretation; that is to say Boethius restricts the Principle of Bivalence when it comes to statements about future contingent events.[141] Other scholars hold that Boethius adheres to a

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[138] Some hold that this is because he was following a precedent set by Porphyry (d. ca. 305 AD), who composed two commentaries on the *Categories*, the first of which is a "textbook" commentary in the sense that it remains close to the text, while the second is more open-ended and speculative. Richard Sorabji, "Boethius, Ammonius and their different Greek backgrounds" in David Blank and Norman Kretzmann (trans.), *Ammonius on Aristotle on Interpretation 9 with Boethius on Interpretation 9* (London: Duckworth, 1998b), 9; 16-23; John Marenbon, "Anicius Manlius Severinus Boethius."

[139] This text, considered a masterpiece of early medieval Christian literature was written by Boethius during a one-year prison sentence while he awaited trial for allegedly committing treason under the reign of King Theodoric the Great (d. 526 CE) in Rome. Organized into five books, it is written as a dialogue between the Prisoner (taken to be Boethius himself) and Lady Philosophy, who visits Boethius in his cell. It is a prosimetrum, i.e. a work consisting of both metered verse and prose. A range of topics are discussed in the *Consolatione*, including: the nature of happiness, God as final cause of the world, the existence of chance, and, of primary interest to us, the compatibility of an omniscient god with contingency and human moral responsibility. For an English translation with introduction see Goins, Wyman, Pearce (*The Consolation of Philosophy* [San Francisco: Ignatius Press, 2012]). For more on Boethius' life and philosophy, see Reiss (*Boethius*) and Marenbon [*Boethius* (New York: Oxford University Press, 2002]).

[140] James Shiel, *Boethius' Commentaries on Aristotle in Relation to the Greek Commentaries with Special Reference to Porphyry* (Oxford, Oxford University Press, 1952).
Boethius directly mentions his use of Porphyry in his second commentary on *De Interpretatione*, ("Boethius' second commentary on Aristotle on Interpretation 9," in *Ammonius on Aristotle on Interpretation 9 with Boethius on Interpretation 9*, trans. Norman Kretzmann [London: Duckworth, 1998], 219.17). It is generally accepted that Porphyry was influenced by Alexander of Aphrodisias (Zimmerman, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, lxxxv). Boethius' inclusion of a number of issues that were debated among Stoic determinists and Peripatetic is indicative of the Alexandrian currents in his thought, likely via Porphyry (Sorabji, "Boethius, Ammonius and their different Greek backgrounds," 16).

[141] See Frede ("The sea-battle reconsidered: A defence of the traditional interpretation," 72), Craig (*The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*, 85-87), Gaskin (*The Sea Battle and the Master Argument*, 146), and Kretzmann ("Boethius and the truth about tomorrow's sea battle," in *Boethius on*

non-standard approach; he does not restrict bivalence but rather holds that future contingent propositions have a contingency-compatible truth-value.[142] In the *Consolatione*, the Prisoner, Boethius, presents the problem of divine foreknowledge in the following way:[143]

> Then said I: 'But now I am once more perplexed by a problem yet more difficult.'
> 'And what is that?' said she; 'yet, in truth, I can guess what it is that troubles you.'
> 'It seems,' said I, 'too much of a paradox and a contradiction that God should know all things, and yet there should be free will [*libertatis arbitrium*]. For if God foresees [*praenoscere*] everything, and can in no wise be deceived that which providence foresees [*praeviderit*] to be about to happen must necessarily come to pass. Wherefore, if from eternity [*ab aeterno*] He foreknows not only what men will do, but also their designs and purposes, there can be no freedom of the will [*nulla erit arbitrii libertas*], seeing that nothing can be done, nor can any sort of purpose be entertained, save such as a Divine providence, incapable of being deceived [*nescia falli*],[144] has perceived beforehand. For if the issues can be turned aside [*sunt detorqueri valent*] to some other end than that foreseen by providence, there will not then be any sure foreknowledge [*praescientia*] of the future, but uncertain conjecture instead [*opinio potius incerta*], and to think this of God I deem impiety [*quod de deo credere nefas iudico*].

Boethius frames the problem in terms of free will; if God knows all future events, and He cannot be deceived, then everything He knows as happening must happen. This means that the future is fixed, and determinism is true. If things could come to pass without God knowing them, or if God's foreknowledge could change, then that means that God's knowledge is not really knowledge but rather "uncertain conjecture," and to think this is impious.[145] If determinism is

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Aristotle on Interpretation 9 [London: Duckworth, 1998], 34) for this view. Gaskin and Kretzmann differ from the former two in that they divide bivalence into "broad bivalence" and "narrow bivalence," and they argue Boethius accepts broad but rejects narrow bivalence for future contingent propositions.

[142] See Mignucci (*Ancient Logic, Language, and Metaphysics: Selected Essays by Mario Mignucci.* New York: Routledge, 2019], 222), Seel (Gerhard Seel, Johannes Schneider, Daniel Schulthess, and Mario Mignucci, "Introduction," in *Ammonius and the Seabattle : Texts, Commentary, and Essays* (New York: Walter de Gruyter, 2001, and Beets ("Theories of prediction from Boethius to Thomas Aquinas," in *Aristotle's Peri hermeneias in the Latin Middle Ages: Essays on the Commentary Tradition*, eds. H. Braakhuis and C. Kneepkens [Turnhout: Brepols, 2003, 305-319] for such a reading of Boethius.

[143] Book V, Prose 3; The English translation is Montague James' (Montague Rhodes James (trans.), *The Consolation of Philosophy of Boethius* (London: Elliot Stock, 1897). The Latin edition is Buchanan's (James Buchanan, *De Consolatione Philosophiae* (New York: F. Ungar, 1957).

[144] Lit. not knowing how to be deceived.

[145] Craig (*The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*, 79) notes that Boethius' presents the problem in a '"doppelgängig," i.e. a bidirectional, manner. First he assumes foreknowledge and shows how this precludes free will, which is absurd. Then (at "For if the issues can …") he assumes that things

true, then we cannot act in any way other than how God knows us to act, and there can be no free will. Further down in Book V Prose 3, he mentions how determinism threatens the value of prayer and of hope, since there would be no point in hoping or praying about the future if it is the thing we are praying for is already decided.

> Before giving the acceptable answer to the problem, Boethius gives an answer he finds unacceptable:[146]
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> Moreover, I do not approve the reasoning by which some think to solve this puzzle. For they say that it is not because God has foreseen the coming of an event that *therefore* it is sure to come to pass, but, conversely, because something is about to come to pass, it cannot be hidden from Divine providence; and accordingly the necessity passes to the opposite side, and it is not that what is foreseen must necessarily come to pass, but that what is about to come to pass must necessarily be foreseen [*Aiunt enim non ideo quid esse eventurum, quoniam id providentia futurum esse prospexerit, sed e contrario potius, quoniam quid futurum est, id divinam providentiam latere non posse eoque modo necessarium hoc in contrariam relabi partem, neque enim necesse esse contingere quae providentur, sed necesse esse quae futura sunt provideri*].

Boethius is mostly likely referring to the influential Christian theologian Origen (d. 254 CE), who attempted to escape determinism by arguing that divine knowledge does not cause the occurrence or non-occurrence of the events in the world, and that, rather, the way the world is determines God's knowledge to be the way it is.[147] Boethius finds this solution unsatisfactory for two reasons. First, the fact that God's knowledge is caused by the events in the world does not necessarily restore contingency; if things are already determined, then it is irrelevant for contingency whether or not they also cause God's knowledge. If God knows Socrates as walking tomorrow because it is true that Socrates will walk tomorrow, and God's knowledge is not the reason that it is true that Socrates will walk tomorrow, then it is already true that Socrates will walk tomorrow, whether or not God knows it. If it is true that Socrates will walk tomorrow, then Socrates must walk tomorrow, since propositions must correspond to actuality, and the worries return. Secondly (this point he makes further down), Boethius thinks it preposterous to speak of temporal things as causing eternal foreknowledge (*Iam vero quam praeposterum est ut aeternae praescientiae temporalium rerum eventus causa esse dicatur*). This is because, presumably, God

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could turn out in a way other foreknowledge knows them and shows how this means that God's foreknowledge is not knowledge proper but uncertain conjecture.

[146] V, P3

[147] Craig, *The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*, 80-81.

(or God's knowledge) is the cause of things, not the other way around.

The proper answer, described in Book V, Prose V, is that knowledge does not conform to the nature of the known, but rather to the nature of the knower. Lady Philosophy gives the example of how different senses comprehend the same thing differently; sight might comprehend the roundness of a body all at once via the rays that travel from the round surface to the eye, whereas touch might comprehend the roundness of the body in a piecemeal fashion (i.e. we would turn it around in our hands and come to understand its roundness in this way). God's knowledge of the world is like sight; He sees everything (past, present, and future) in one instantaneous "swoop," so to speak, "a single flash of intuition" [*uno ictu mentis*]. Despite knowing all things, He does not partake in the particular features of those things known.[148] He, by virtue of His eternal nature, does not partake in a past, present, and future like we do. To be eternal is to possess "endless life whole and perfect at a single moment" [*Aeternitas igitur est interminabilis vitae tota simul et perfecta possessio*].[149] Thus God does not have foreknowledge, properly speaking. He simply has knowledge. His knowledge of the world is like "knowledge of a moment that never passes" [*scientiam numquam deficientis instantiae*, ibid].[150] In the same way that our present knowledge of Socrates' walking does not impose any necessity on Socrates' walking, God's knowledge of the world does not impose any necessity on its events.[151] The difference is that our knowledge may be discussed in terms of in a past, present, and future, since we are finite beings created in time, whereas God's knowledge is eternal, and thus He sees everything as if it were occurring in a type of never-ending instantaneous present.[152]

This is an interesting answer, in that it argues that God's knowledge does not confer necessity on its objects any more than our knowledge of presently occurring things does. But as

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[148] i.e. He knows the material without He himself being material, He knows the finite without Himself being finite, etc.

[149] V, P6

[150] That divine knowledge is outside of time and immutable is a view that Boethius might have in common with Aristotle (Benjamin Fuller, "The theory of God in book Λ of Aristotle's Metaphysics," *The Philosophical Review* 16, no. 2 [1907]: 170-83).

[151] See Zagzebski (*The Dilemma of Freedom and Foreknowledge* [New York: Oxford University Press, 1996], 10-11).
for a useful thought experiment to show why knowledge of a thing has no causal bearing on that thing, given that the knower is fallible.

[152] For a modern take on this style of solution, see Kretzmann and Stump ("Eternity," *The Journal of Philosophy* 78, no. 8 [1981]: 429-58).

Boethius notes to Lady Philosophy, this solution on its own will not suffice to treat the concern. If God knows that X is Y, then X must still be Y. Even though God's knowledge does not cause the necessity of X's Y-ness, it still follows from God's knowledge that X is Y that X must be Y because knowledge of X as Y entails that X actually is Y. Just as before, if God knows X is Y, but it turns out that X is Z, then God was deceived, which would be a conclusion that is impious to believe. So the future is again fixed to God's knowledge of it.

Lady Philosophy's responds:[153]

And if to this thou sayest that what God sees to be about to come to pass cannot fail to come to pass [*Hic si dicas quod eventurum deus videt id non evenire non posse*], and that what cannot fail to come to pass happens of necessity [*quod autem non potest non evenire id ex necessitate contingere*], and wilt tie me down to this word necessity [*meque ad hoc nomen necessitatis adstringas*], I will acknowledge that thou affirmest a most solid truth, but one which scarcely anyone can approach to who has not made the Divine his special study. For my answer would be that the same future event is necessary from the standpoint of Divine knowledge [*respondebo namque idem futurum, cum ad divinam notionem refertur, necessarium*], but when considered in its own nature it seems absolutely free and unfettered [*cum vero in sua natura perpenditur, liberum prorsus atque absolutum videri*]. So, then, there are two necessities—one simple, as that men are necessarily mortal [*Duae sunt etenim necessitates, simplex una, veluti quod necesse est omnes homines esse mortals*]; the other conditioned, as that, if you know that someone is walking, he must necessarily be walking [*ut si aliquem ambulare scias, eum ambulare necesse est*]. For that which is known cannot indeed be otherwise than as it is known to be, and yet this fact by no means carries with it that other simple necessity. For the former necessity is not imposed by the thing's own proper nature, but by the addition of a condition [*Hanc enim necessitatem non propria facit natura sed condicionis adiectio*]. No necessity compels one who is voluntarily walking to go forward, although it is necessary for him to go forward at the moment of walking. In the same way, then, if Providence sees anything as present, that must necessarily be, though it is bound by no necessity of nature [*Eodem igitur modo, si quid providentia praesens videt, id esse necesse est, tametsi nullam naturae habeat necessitate*]. Now, God views as present those coming events which happen of free will. These, accordingly, from the standpoint of the Divine vision are made necessary conditionally on the Divine cognizance [*haec igitur ad intuitum relata divinum necessaria fiant per condicionem divinae notionis*]; viewed, however, in themselves, they desist not from the absolute freedom naturally theirs.

Lady Philosophy uses Aristotle's distinction between simple and conditional necessity discussed

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[153] V, P6

in *Metaphysics* V.5. She calls them two necessities. It is necessarily true that Socrates is walking, on the condition that Socrates is walking; had Socrates not been walking, then it would not have been true that Socrates is walking. Thus Socrates' walking is not necessary in the simple sense of necessity, i.e. the 4th type (that which cannot be other than it is), which Aristotle identifies as the fundamental type of necessity. Applying this distinction to the relation of divine knowledge to its objects, the (contingent) objects of God's knowledge partake in conditional necessity, not simple necessity. On the condition that God knows that Zayd is going to the market, it is necessary that Zayd go to the market. But God could just have easily known that Zayd is going to the market, in which case Zayd would not have gone to the market. Zayd's going to the market is intrinsically contingent, since it could have been other way than the way it was (there would be no logical contradiction nor would it break any natural laws), but is extrinsically necessary by virtue of God's knowledge of Zayd's going.

This sums up our overview of Boethius' treatment of the problem of future contingents and the problem of divine foreknowledge. Two features are particularly noteworthy. First, his solution to the problem of divine foreknowledge seems to follow the non-standard interpretation. Boethius at the opening of the first excerpt cited above writes that God foreknows what men will do; this means that there is a fact about the future which God knows. Boethius at Book V Prose 3 rules out the possibility that God have disjunctive (indefinite) knowledge of the future, i.e. knowledge that either Zayd will go to the market or not, but not knowledge as to which one of the two is true. He does this by rhetorically asking how such knowledge could be any more foreknowledge than the "vatication of Teiresias" who vacuously claims that "[Whatever] I say, will either come to pass – or not."[154] This means that future contingent propositions do have bivalence; they have truth values. If they did not have truth values, then there would be no truth value for God to know. One might object and argue that at the present moment neither disjunct is true nor false, but God knows which one will eventually be true. In this sense future contingent propositions are not bivalent in the present.

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[154] These are not the words of the Theban seer Teiresias (or Tiresias), but rather of the Roman lyric poet Horace (d. 8 BCE) (*Satires*, trans. A. M. Juster [Philadelphia: University of Pennsylvania Press, 2012] 2, 5.59). For why the Prisoner (i.e. Boethius) might commit this misquotation, see Fournier ("Boethius and Homer," *The Downside Review* no. 128, 452 [2010]: 194-196).

The tenability of such an objection is ruled out by Boethius' insistence on God's atemporality; God knows everything that was, is, and will be "by means of a single flash" [*uno ictu*]. He knows what seems to us as future as present. Thus for Him, it is timelessly true that Zayd go to the market tomorrow, but this knowledge is compatible with the contingency of the event in question since the necessity of Zayd's walking is not intrinsic (i.e. simple); there would be no logical contradiction if Zayd were not to walk, nor would it violate natural laws.[155] Thus with respect to the problem of divine foreknowledge, Boethius' solution is more in line with the non-standard than the standard interpretation. Future contingent propositions have assigned truth values in the present, since if they did not, then God would not be able to know them, and God must have definite (non-disjunctive) knowledge of all things.

Secondly, we note that Boethius' solution is vulnerable to at least one objection, which we adapt from Zagzebski.[156] Zagzebski highlights the problem that the eternality of God's timeless knowledge poses. If God's knowledge is eternal, then it possesses no potentiality for being otherwise. This is because, among other things, Boethius understands that which is eternal as possessing "endless life whole and perfect at a single moment" [*vitae tota simul et perfecta possession*].[157] God's knowledge "must of necessity be ever present to itself in full self-possession, and hold the infinity of movable time in an abiding present" [*sui compos praesens sibi semper assistere et infinitatem mobilis temporis habere praesentem*]. This does not leave room for potentiality in God's knowledge.[158] If God timelessly and eternally knows Socrates as

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[155] This motivates some scholars, like Craig (*The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*, 97-98), to argue that Boethius' response is in line with the traditional interpretation. If God had foreknowledge of future events, then those events would occur necessarily. But God does not have foreknowledge; because His knowledge is timeless, He simply has knowledge. Hence He does not know the truth-values of future contingent propositions. We do not agree with this reading. Boethius accepts that God knows all things that have occurred, that do occur, and that will occur. He knows as present what seems to us as future. Thus he does know whether Socrates will walk tomorrow or not, but in a manner commensurate with His eternal and timeless self.

[156] Zagzebski, *The Dilemma of Freedom and Foreknowledge*, 60-63.

[157] V, P6

[158] Zagzebski (*The Dilemma of Freedom and Foreknowledge*, [60-63] makes the point that, intuitively, it seems timeless eternity is modally more like the past than it is like the future. This is because, among other things, the past, like timeless eternity, is ontologically real unlike the future which is yet to be real.

walking, there can be no potentiality that God know Socrates as not walking. To borrow a word

from Sorabji, God's knowledge is not only infallible but also *irrevocable*.[159] This means that

there is nothing which Socrates can do today to change God's timeless, eternal, and infallible

knowledge of his walking on (what seems to our human minds as) tomorrow, and the worries of

determinism return (futility of prayer, injustice of God, etc.).

IV.   Ammonius (ca. 435/445–517/526)

Ammonius composed a lengthy and influential commentary on *De Interpretatione* which

survived in its entirety. It is the longest text he wrote.[160] Ammonius studied at Athens studied

under Proclus (d. 485 CE) before returning to his native Alexandria. He represents an important

vehicle of transmission by which the Athenian philosophical traditions came to Alexandria,

helping to solidify it as an intellectual powerhouse and the "home" of late-antique philosophy,

especially after Justinian I's closure of the Academy at Athens in 529 CE.[161] As we saw in the

previous chapter, Ammonius was important in cementing late-antique attempts to harmonize the

Aristotelian and Platonic philosophical systems. We noted above that Porphyry (d. 305 CE) was

likely Boethius' main model for his commentaries on *De Interpretatione*. Although Ammonius

was aware of Porphyry, he was not his main source.[162] Ammonius' main source was likely

Proclus, a follower of Iamblichus (325 CE), who himself probably studied under Porphyry.[163]

Boethius and Ammonius were contemporaries, and they had a common ancestor in Porphyry

(directly in the Boethius, indirectly in the case of Ammonius), but they did not influence one

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[159] Richard Sorabji, The three deterministic arguments opposed by Ammonius," in *Ammonius on Aristotle on Interpertation* 9 [London, Duckworth, 1998a], 6.

[160] Robert Van de Berg, "Smoothing over the differences: Proclus and Ammonius on Plato's *Cratylus* and Aristotle's *De Interpretatione*," in *Aristotle Re-Interpreted: New Findings on Seven Hundred Years of the Ancient Commentators* (London: Bloomsbury, 2016), 353.

[161] David Blank, "Ammonius."

[162] See for example 1.6-11 or 181.30-1 as mentioned in Sorabji ("Boethius, Ammonius and their different Greek Backgrounds," 17).

[163] At the opening of his commentary, Ammonius writes that "Now, we have recorded the interpretations of our divine teacher Proclus, successor to the chair of Plato and a man who attained the limits of human capacity both in the ability to interpret the opinions of the ancients and in the scientific judgment of the nature of reality. If, having done that, we too are able to add anything to the clarification of the book, we owe great thanks to the god of eloquence'" (1.6-11; citation taken from Blank, 2017).

another.[164] Iamblichus and Porphyry differed in several ways.[165]

Ammonius' commentary on *De Interpretatione* IX consists of discussions of three determinist arguments. The first of these is the reaper argument, which likely originates with the Greek Dialectical thinker Diodorus Cronus. Diodorus Cronus lived in the 4th/3rd century BCE, and made important contributions to logic; he is particularly known for introducing technical modal terms and for his discussions of the form of conditional statements.[166] The reaper argument exploits similar intuitions to those that apply to the problem of future contingents in order to arrive to an *aporia*. It observes that statements of the form "perhaps you will reap" can never be true, since it is either the case that you will reap, or it is the case that you will not reap. It is thus not perhaps true. Given that this determinist argument is not picked up by Yaḥyā, nor al-Fārābī, we will not say more about it here.[167]

After discussing the reaper problem Ammonius presents the problem of divine foreknowledge:[168]

> The other argument, which is so troublesome and difficult to face that even many of those who are thought most expert are led off to the belief which destroys the contingent, proceeds from the following sort of division ['Ο δέ γε ἕτερος τῶν λόγων οὕτως ὤν πραγματειώδης καὶ δυσαντίβλεπτος, ὥστε καὶ πολλοὺς τῶν ἐπιστατικωτέρων εἶναι δοκούντων ἀπάγεσθαι πρὸς τὴν ἀναιροῦσαν τὸ ἐνδοχόμενον δόξαν, πρόεισιν ἐκ διαιρέσεως τοιαύτης]. The gods,' they say, 'either know in a definite manner the outcome of contingent things, or they have absolutely no knowledge of them, or they have an indefinite knowledge of them, just as we do [οἱ θεοί, φασίν, ἤτοι ὡρισμένως ἴσασι τὴν ἔκβασιν τῶν ἐνδεχομένων ἤ παντάπασιν οὐδεμίαν αὐτῶν ἔχουσιν ἔννοιαν ἤ καθάπερ ἡμεῖς ἀόριστον αὐτῶν ἔχουσι τὴν γνῶσιν].

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[164] Riccardo Chiaradonna and Adrien Lecerf, "Iamblichus," Sorabji, "Boethius, Ammonius and their different Greek backgrounds," 17; Kretzmann, "Boethius and the truth about tomorrow's sea battle," 26.

[165] For example, Iamblichus harshly critiqued what he considered to be an over-intellectualism in Porphyry's thought and emphasized the importance of ritualistic "theurgy" (from θεῖος + ἔργα or θεῶν + ἔργα meaning, literally, "divine acts" or "the acts of the divinities") for the soul's salvation. For more on Iamblichus' "theological" Platonism and how he differed from Porphyry, see Chiaradonna and Lecerf ("Iamblichus"), Shaw ("Theurgy: rituals of unificiation in the Neoplatonism of Iamblichus," *Traditio* 41 [1985]: 1-28, or Dodds (E.R. Dodds, *The Greeks and the Irrational* [Berkeley and Los Angeles: University of California Press, 1951], 285-298).

[166] David Sedley, "Diodorus Cronus and Hellenistic Philosophy," *Proceedings of the Cambridge Philological Society*, 203, no. 23 (1977): 74-120. For more on the Dialectical School, see Bobzien ("Dialectical School", *The Stanford Encyclopedia of Philosophy* [Spring 2019], https://plato.stanford.edu/archives/spr2019/entries/dialectical-school/).

[167] See Seel ("Introduction," 291-318) for a detailed breakdown and discussion of the reaper argument.

[168] 132.8-13; the English translation is Blank's (*On Aristotle on Interpretation 9* [London: Bloomsbury Academic, 2014]). The Greek edition is Hayduck's (*Commentaria in Aristotelem Graeca,* vol. 4 [Berlin: George Reimer, 1881]).

For the poser of the problem, according to Ammonius, one of the following must be true: (1) the gods know in a definite manner [ὡρισμένως] the outcome of contingent things, (2) they have no knowledge of them, (3) they have an indefinite [ἀόριστον] knowledge of them. The determinist refutes (2) and (3), so he concludes that (1) is the case. (2) is rejected on the grounds that is impossible for that which "brings about" and "arranges" all things to be ignorant of them.[169] The gods play the "role of a principle with respect to what exists."[170] Since they are the causes and anterior to all things which existence, nothing can escape their knowledge.[171] Nor is it possible for the gods that bring about all things to neglect them, as if they were careless.[172] That is to say, it is not the case that the gods are aware of how things are but are not in some way involved in their existence. (3) is rejected since it is impossible that the gods have indefinite knowledge of future contingents like we do; this would introduce ambiguity into divine knowledge and it would mean that the gods need conjecture about the outcomes of contingent affairs, which is absurd.[173]

Thus (1) must be true. It is necessary that the gods know the future in a definite manner. But if (1) is true, then the contingent is destroyed. This is because if the gods definitely know that something will be the case, then that something must be the case without exception. Thus since (1) is true, contingency is an empty name; there is nothing which may be described as contingent.[174]

This is how Ammonius understands the problem: it establishes that the gods must know future contingents in a definite manner because it is impossible that they be wholly ignorant of them and it is unbefitting for the divine to have indefinite knowledge of them. Ammonius does not explain what he means by "definite" and "indefinite" knowledge, but we can glean from his commentary that indefinite knowledge is accepting of ambiguity and conjecture.[175] This suggests that however Ammonius understands definite knowledge, it does not partake in ambiguity, nor is it something about which we can conjecture or deliberate. Definite knowledge is fitting of the

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[169] 132.15-20
[170] 133.24-25
[171] 134.3-4
[172] 132.16-19
[173] 133.31-33
[174] 135.1-11
[175] 133.29-33

gods, who are entirely unchanging and exist without a past, present, or future.[176] Elsewhere, he writes that divine knowledge is unchanging.[177] It is for these reasons that definite knowledge is incompatible with contingency.

How then are we to preserve contingency while upholding the definite nature of divine knowledge? Ammonius responds with a solution he attributes to Iamblichus:[178]

> … we answer in accordance with the teaching of the divine Iamblichus [ἀπαντῶντες ἡμεῖς κατὰ τὴν τοῦ θείου ’Ιαμβλίχου ὑφήγησιν], and we shall think it right to distinguish the various degrees of knowledge by saying that knowledge is intermediate between the knower and the known [τὰ διάφορα μέτρα τῶν γνώσεων διαιρεῖν ἀξιώσομεν λέγοντες ὡς ἡ γνῶσις μέση οὖσα τοῦ τε γινώσκοντος καὶ τοῦ γινωσκομένου], since it is the activity [ἐνέργεια] of the knower concerning the known – for example, the activity of sight concerning the pale – and it sometimes knows the known in a way better than the nature of the knowable thing itself, sometimes worse, and sometimes on the same level [ποτὲ μὲν χρειττόνως γινώσκει τὸ γινωσκόμενον, της αὐτοῦ τοῦ γνωστοῦ φύσεως ποτὲ δὲ χειρόνως ποτὲ δὲ συστοίχως]. For when we say that our own intelligence [νοῦν] while dealing with political actions knows the individual affairs by referring them to the universals [καθόλου] and attempting to know them by means of those, as they are akin to them, it is clear that then we shall say that the knowledge is better than the known, since the individual is divisible [μεριστὸν] and changing [εν μεταβολῇ], but reason [λογος], according to which the practical intelligence [ὁ νους ὁ πρακτικὸς] knows these things, is indivisible and unchanging [ἀδιαίρετός τε καὶ ἀμετάβλητος]. But when intelligence, returning to itself and acting according to the purifying virtues [ὅταν δὲ αὐτὸς πρὸς ἑαυτὸν ἐπιστρεφόμενος καὶ κατὰ τὰς καθαρτικὰς ἀρετὰς οὐσίαν τὴν ἑαυτοῦ θεορῇ], observes its own essence, its knowledge is necessarily on the same level as what is known [σύστοιχον εἶναι ἀνάγκη τῷ γινωσκομένῳ τὴν γνῶσιν]. And when intelligence, having risen to the peak of its own perfection [ἀνελθὼν ἐπὶ τὸ ἀκρότατον τῆς ἑαυτοῦ τελειότητος] and dealing with the theoretical virtues, observes what concerns the divine arrangements, how they are derived from the single principle of all things [ὅπως ἐκ τῆς μιᾶς τῶν πάντων ἀρχης αὗται παράγονται], and what is the proper quality of each of them, its knowledge is necessarily worse than what is known [χείρονα εἶναι ἀνάγκη τοῦ γινωσκομένου τὴν γνῶσιν].

The idea is that the nature of the knower need not correspond to the nature of the known. Sometimes the knower knows the known in a manner better than the known thing's nature. Ammonius gives the example of our contemplation of political actions [τὰς πολιτικὰς τῶν πράξεων]. Since we can only have knowledge of them through immutable universals, yet they themselves are changeable affairs, our knowledge of them is of a superior nature than the affairs

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[176] 133.19-20; 133.26-7

[177] 136.1-3

[178] 135.14-32. It is unclear where, or if, Iamblichus presented such a solution. We may find versions of it in a number of places in Proclus, a loyal follower of Iamblichus and Ammonius' teacher, although he never directly attributes this view to Iamblichus. See for example *On Providence* (63f), *Elements of Theology* (125-7), *On the Theology of Plato* (385), *Ten Doubts Concerning Providence* (496) or his commentary on Plato's *Timaeus*, (1,352.13) (Sharples, "Alexander of Aphrodisias, De Fato: Some Parallels," 260).

themselves. [179] Sometimes the knower knows the known in a manner commensurate with the known thing's nature. Ammonius' example here is how the soul, through cultivating its intellective capacity, is able to accurately reflect on its own intellective essence. Here, the intellective aspect of the soul, an eternal and immutable thing, thinks itself, also an eternal and immutable thing; thus the knower and the known are on the same level.[180] Finally, sometimes the knower is in a lower state than the thing known. The example is the intellect once it is perfected, i.e. once it has grasped all the universals, and is able to see how the multiplicity of the world is derived from a single principle.[181] The intellective part of the soul, which admits of multiplicity, reaches a point where it is able to contemplate the originating principle of all being, which does not admit of multiplicity. In this case the knower is inferior to the thing known, and this is like our knowledge of divine things. God's knowledge is of the first type: God knows things in a manner better than how they are. This is because He, an eternal and non-changing being, knows changeable divisible things in a manner commensurate with His nature:

> Now, these things being so, we must say: that the gods know everything which has occurred, which is <now>, and which will be or is going to be in the way appropriate for the gods, that is, by one definite and unchanging knowledge [Τούτων οὖν οὕτως ἐχόντων ῥητέον τοὺς θεοὺς γινώσκειν μὲν πάντα τὰ γεγονότα καὶ τὰ ὄντα καὶ τὰ ἐσόμενα ἤ μέλλοντα τὸν θεοῖς προσήκοντα τρόπον, τοῦτο δέ ἐστι μιᾷ καὶ ὡρισμένῃ καὶ ἀμεταβλήτῳ γνώσει ...][182]
> …
>
> it is necessary for them to know divisible things indivisibly and without partition, as well as multiplied things by a single act, temporal things eternally, and generated things ungeneratedly [καὶ γὰρ τὰ μεριστὰ τῶν πραγμάτων ἀμερίστως καὶ ἀδιαστάτως γινώσκειν αὐτοὺς ἀναγκαῖον, καὶ τὰ πεπληθυσμένα ἐνδοειδῶς καὶ τὰ ἔγχρονα αἰωνίως καὶ τὰ γεννητὰ ἀγεννήτως …][183]

This is because the gods do not partake in a past, present, or future; this would introduce generation and corruption into the divine essence via divine knowledge, and it is impossible that the divine accept anything which is impermanent or "parallels the flux of things."[184]

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[179] This stems from an ancient conception of knowledge where objects of knowledge must be invariable and universal (Richard Parry, "Episteme and Techne," *The Stanford Encyclopedia of Philosophy* (Fall 2020), <https://plato.stanford.edu/archives/fall2020/entries/episteme-techne/; Shields, Christopher, "Aristotle," *The Stanford Encyclopedia of Philosophy* [Fall 2020], <https://plato.stanford.edu/archives/fall2020/entries/aristotle/).

[180] For more on the Neoplatonic idea of the intelligence "acting according to the purifying virtues" and self-intellecting, see Emilsson (*Plotinus on Intellect* [Oxford: Clarendon Press, 2007]) and Vargas and Helmig (Antonio Vargas, and Christoph Helmig, "Neoplatonic theurgy between ritual and philosophy" in *Fate, Providence and Moral Respons mibility in Ancient, Medieval and Early Modern Thought: Studies in Honour of Carlos Steel*, eds. Pieter d' Hoine and Gerd Van Riel, [Leuven: Leuven University Press, 2014]).

[181] For more on Neoplatonic emanation and the idea of the many coming from the One, see Rist (Plotinus: The road to reality." *Tijdschrift Voor Filosofie* 30, no. 2 [1967]: 401-402) and Wallis (*Neoplatonism*, 2nd ed, [London: Duckworth and Indianapolis: Hackett Publishing Company, 1995]).

[182] 136.1-5

[183] 136.15-17

[184] 136.17-20

Nevertheless, it still seems to be the case that if God knows X as Y, then X must be Y; hence the occurrence of Y is not contingent. If God knows that Socrates will go to the market tomorrow, then Socrates must go to the market tomorrow. The non-reality of contingency is still implied. Ammonius addresses such an objection:[185]

> 'One must not think that the things we are calling 'contingent' will have a necessary outcome because of the fact that they are known in a definite manner by the gods [καί οὐ κρὴ νομίζειν ὅτι ἀναγκαίαν ἕζει τὴν ἔκβασιν ἅ λέγομεν ἐνδεχόμενα διὰ τὸ ὑπὸ θεῶν γινώσκεσθαι ὡρισμένος]: it is not because the gods know them that they will occur [οὐ γὰρ διότι γινώσκουσιν αὐτὰ οί θεοί, διὰ τοῦτο ἀναγκαίως ἐκβήσεται], but since, having a contingent and ambiguous nature, they will have an end, which, whatever happens, is either so or so [ἀλλ' ἐπειδὴ φύσιν ἔχοντα ἐνδεχομένεν καὶ ἀμφιβολον πέρας ἕξει πάντως ἢ τοῖον ἢ τοῖον], it is necessary that the gods know how they will occur [διὰ τοῦτο τοὺς θεοὺς εἰδέναι ἀναγκαῖον ὅπως ἐκβήσεται].

Ammonius asserts that divine knowledge is not the cause of the occurrence or non-occurrence of such things. Since they have a contingent and ambiguous nature, they can go either way. God's knowledge will know how they go, but it is not the reason why they turn out that way. Presumably, there are other causes which determine whether a thing happens or not. He explains how this works:[186]

> And the same thing is contingent in its own nature [καί ἔστι τὸ αὐτο τῇ μὲν φύσει τῇ ἑαυτοῦ ἐνδεχόμενον], but in the gods' knowledge it is no longer indefinite, but definite [τῇ δὲ γνώσει τῶν θεῶν οὐκέτι ἀόριστον ἀλλ' ὡρισμένον]. It is clearly possible for the contingent sometimes to be known in a definite manner even by our own knowledge [δῆλον δὲ ὅτι καὶ τῇ ἡμετέρα γνώσει δυνατὸν ὡρισμένως ποτὲ γινώσκεσθαι τὸ ἐνδεχόμενον], namely when it is no longer contingent properly-speaking, but necessarily follows from the causes leading the way to its generation, [ὅτε οὐδὲ κυρίως ἔτι ἐστὶν ἐνδεχόμενον ἀλλ' ἐξ ἀνάγκης ἀκολουθει τοῖς προηγησαμένοις αἰτίοις τῆς ἑαυτοῦ γενέσεως]: it is possible, for example, for a sphere which rests on a horizontal surface, while the surface keeps the same position, to be moved by something or not [τὴν γοῦν σφαῖραν τὴν ἠρεμοῦσαν ἐν παραλλήλῳ τῷ ὁρίζοντι ἐπιπέδῳ δυνατὸν μὲν τοῦ ἐπιπέδου τὴν αὐτὴν ἔχοντος θέσιν κινεῖσθαι τε ὑπό τινος καὶ μή], but when the surface is tilted it is impossible for it not to be moved, [τοῦ μέντοι ἐπιπέδου κλιθέντος μὴ κινηθῆναι ἀδύνατον].

A sphere which is sitting upon a surface can roll contingently; that is to say, it might roll or it might not roll. We may have indefinite knowledge of this, i.e. knowledge that accepts ambiguity in the sense that we know that the sphere might roll, or it might not roll if nothing acts on it. If the surface upon which the sphere rests tilts, or if an external agent pushes the sphere, the rolling of the sphere becomes necessary, and we can know it definitely, i.e. we can know without ambiguity whether it will roll or not. This is how we can know things which are inherently indeterminate in a determinate way, and how something may be inherently contingent but come to be necessary by means of something external. This is analogous to the simple vs. hypothetical necessity distinction that we saw Boethius use above to answer a similar objection: future

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[185] 136.25-30
[186] 136.30-137.7

contingents are inherently contingent, but when taken in conjunction with God's knowledge of them, they become necessary. This necessity, however, is still extrinsic. God's knowledge is like the tilting of the surface with respect to the sphere: they both entail the necessity of the sphere's rolling, but it is an extrinsic necessity. The sphere's rolling, taken on its own (i.e. intrinsically), is contingent; it could occur or not. Ammonius elaborates more clearly on these two types of necessity in his comments on 19a23:[187]

> [Aristotle] says that there are two kinds of 'necessary' [things] [διττὸν εἶναι φησι τὸ ἀναγκαῖον]: first, that which is absolutely and properly so called, namely what always holds of its subject so that the subject cannot exist without it … [τὸ μὲν τὸ ἁπλῶς και κυρίως λεγόμενον, ὅπερ ἐστὶ | τὸ ἀεὶ ὑπάρχον τῷ ὑφοκειμένῳ ὡς οὐδὲ ὑπεστάναι χωρὶς αὐτοῦ δυναμένῳ …] ; second, what is not [absolutely so called], but has the qualification 'as long as what is said by the one who says it is so is true … [… τὸ δὲ οὐ τοιοῦτον αλλὰ μετὰ μὲν προσδιοσμοῦ τοῦ ἕως ἂν ᾖ τὸ κατηγορούμενον ὑπὸ τοῦ λέγοντος οὕτως αὐτὸ ἔχειν ἀληθεῦον …][188]

Ammonius notes that some things are simply or essentially necessary; their necessity is by virtue of themselves. If they were not necessary then the thing in question could no longer be what it is. Ammonius offers the fact that a triangle's angles must total 180 degrees as an example of simple necessity.[189] Other things are hypothetically or conditionally necessary: they are only necessary when a proposition about them is true, such as how sitting and walking may be true of one who is sitting or walking.[190] It is conditionally necessary that Zayd walks when the proposition "Zayd walks" is true, but if "Zayd does not walk" is true, then it is (conditionally) necessary that Zayd not walk.

Ammonius' solution is ultimately vulnerable to the same objection that Zagzebski raises against Boethius.[191] This is because Ammonius, like Boethius, holds that divine knowledge is unchanging and all-encompassing, and also believes that divine knowledge of all things occurs in one eternal act, i.e. it is atemporal.[192] This means that divine knowledge is irrevocable, since there is not anything one can do today to affect the events of tomorrow. If divine knowledge timelessly, eternally, and infallibly knows that Socrates is walking to the market on what appears to us as tomorrow, then there is no potentiality for God to know Socrates otherwise.

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[187] 153.13-21
[188] I have slightly departed from Blank's translation here.
[189] 153.13-17
[190] 153.29-33
[191] Zagzebski, *The Dilemma of Freedom and Foreknowledge*, 60-63.
[192] 136.17-20; 136.1-5; 136.15-17.

Ammonius discusses the sea-battle problem after the problem of divine foreknowledge. We will not go into the details of his account of this problem. We will, however, note that Ammonius' reading of Aristotle's solution is also built upon definite and indefinite truth. As was the case with Boethius, there is little consensus regarding how Ammonius' reading of definite and indefinite places him with respect to the standard and non-standard interpretations of Aristotle's solution to the problem of future contingents.[193]

V.   Stephanus (fl. ca. 580 - ca. 640 CE) is the last non-Arabic philosopher we examine. His commentary on *De Interpretatione* is on the whole faithful to the ideas of Ammonius. It is for this reason that we need not examine his work in detail. Nevertheless, it is worth summarizing his positions for two reasons. First, Stephanus' explanations are sometimes clearer and easier to understand than Ammonius', and thus they may be helpful in elucidating the latter's thought. Second, given that Ibn al-Nadīm mentions Stephanus', but not Ammonius', commentary on *De Interpretatione*, Stephanus' work likely represents an important vehicle by which Arabic thinkers like Yaḥyā and al-Fārābī accessed Ammonius' ideas.[194]   Stephanus generally follows Ammonius in the content and organization of his commentary. Like Ammonius he presents and refutes three deterministic arguments. The first one is the reaper argument, which he like Ammonius calls more logical [λογικὸς].[195] The second deterministic argument which he discusses and refutes is the problem of divine foreknowledge, which following Ammonius he also calls "more difficult" [πραγματειωδεστέρος].[196] Given that we already summarized the reaper problem above, and given that neither Yaḥyā nor al-Fārābī include it, we will not say more on it here.

As for the problem of divine foreknowledge, Stephanus sets up the problem in a similar

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[193] Sorabji (*Necessity, Cause, and Blame: Perspectives on Aristotle's Theory*, 92-3), Sharples ("Alexander of Aphrodisias, De Fato: Some Parallels," 263-264), and Mignucci ("Ammonius' Sea Battle," in *Ammonius on Aristotle on Interpretation 9* [London: Duckworth, 1998], 53) read Ammonius in accordance with the non-standard interpretation. Frede ("The sea-battle reconsidered: A defence of the traditional interpretation," 43-5) and Weidemann (Hermann Weidemann (comm/trans.), *Peri hermeneias* [Berlin: Akademie-Verlag 1994], 302-304) defend a standard reading of Ammonius.

[194] Muḥammad ibn Isḥāq al-Nadīm, *Kitāb al-Fihrist*, vol 2, ed. Gustav Flügel (Leipzig: Vogel, 1872), 249.3-5, trans. Bayard Dodge (Columbia University Press: New York), 599-600.

[195] 34.35

[196] 34.37

way as Ammonius by employing a distinction between definite [ἀορίστως] and indefinite [ὡρισμένως] knowledge. God either has knowledge of future things, or not. For God to not know the future is impious and impossible. If God has knowledge of the future, but His knowledge of it is indefinite, this is impious. This is because it would be like our knowledge, which is also presumably indefinite. Thus God must have definite knowledge of the future. But if this is the case, then the future is fixed in the present and determinism is true.[197] As for the solution to the problem, Stephanus like Ammonius offers a solution he attributes to Iamblichus:[198]

> ... resolving this difficulty [regarding Divine foreknowledge] Iamblichus says that sometimes the knower and thing known are equal [τὸ γινῶσκον καὶ τὸ γινωσκόμενον ποτε ἴσα εισίν], as when the soul knows itself [ἡ ψυχὴ ἑατὴν γινῶσκουσα] ... Or else the knower is better [κρεῖττόν] than the known thing and knows it better than in accordance with its nature [κατὰ τὴν φύσιν αὐτοῦ γινῶσκει], as when we know that which is destructible [τὸ φθαρτόν] ... for instance Socrates as rational and mortal animal [ζῷον λογικὸν θνητὸν]. There we know Socrates better than in accordance with his nature, for rational mortal animal is eternal and indestructible [ἀίδιον καὶ ἄφθαρτον]. Or the knower knows worse [χειρόνως] than in accordance with the nature of the thing known, as when we try to know the divine. For we definitely conceive certain figures and shapes of corporeal form [σχήματά τινα καὶ σωματαοειδεῖς μορφὰς τινας], and clearly here the cognition [ἡ γνῶσις] is inferior [χείρων] to the thing that is known. In this way, then, as has been said, it is possible [δυνατὸν] to know the thing known in a way superior [κρειττόνως] to what is in accordance with its nature [κατὰ τὴν φύσιν αὐτοῦ], as we said about Socrates. The Divine knows things that come about in a way superior to what is in accordance with their nature [γινώσκει τοίνον τὸ θεῖον τὰ γινόμενα κρειττόνως ἢ κατὰ τὴν φύσιν αὐτων]. These things on account of their nature come about in an indeterminate way [ἀορίστως γίνονται], but the Divine knows them determinately [τὸ δὲ θεῖον ὡρισμένως αὐτὰ γινώσκει].[199]

He also writes that God's knowledge of something is not the cause of that thing:[200]

> …it is not the case that, by virtue of the fact that he knows, on that account it will come to be, for God's cognition is not the cause of the thing's coming to be; on the contrary, because of the thing, that is the cause of God's knowing in advance [οὐ γάρ ἐστιν ἡ γνοῶσις τοῦ θεῶ αἰτία τοῦ γίνεσθαι τὸ φρᾶγμα ἀλλα τοὐναντιον· ἐπειδη γὰρ τὸ πρᾶγμα, αἰτιον ἐστι τοῦτο τοῦ προγινώσκειν τὸ θεῖον].

Stephanus, like Ammonius and Boethius, does not offer precise definitions of what definite and indefinite knowledge are. His examples for how the status of knower and known may differ, however, are clearer than those of Ammonius and shed light on his understanding of these terms.

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[197] 35.11-19
[198] 35.19-35
[199] The English translation is Charlton's (2000).
[200] 36.36-8

His example of a case where the knower knows the known in a way superior to the known is our knowledge of Socrates is particularly helpful; here we know something which is indefinite (i.e. changeable and destructible), Socrates the individual, as something which is definite (i.e. eternal and indestructible), rational mortal animal. In this sense we know Socrates in a way superior to him, since that which is eternal and indestructible (in a Neoplatonic framework) is superior to that which is changeable and destructible. Whatever the details of indefiniteness and definiteness may be, it seems that for Stephanus definiteness is linked to immutability and eternality (and irrevocability) while indefiniteness is linked to change and corruptibility.

> Stephanus presents the problem of future contingents it in a manner similar to that of Boethius and Ammonius, i.e. in terms of definite and indefinite truth:[201]

> If it is determinately true in the case of individual events that so and so will happen, e.g. that there will be a seafight, definitely there will be a seafight, and all things come about of necessity [εἰ τοίνυν ὡρισμένως ἀληθές ἐστιν ἐπὶ τῶν καθ' ἕκαστα γινομένων ὅτι τόδε τί ἐστιν αὔριον, οἷον ὅτι ἔσται ναυμαχία, πάντως ἔσται ναυμαχία καὶ πάντα ἐξ ἀνάγκης γίνονται].[202]

In his comments on 19a23-4, he also includes the division of necessity into hypothetical and absolute.[203] Things which are hypothetically necessary are necessary as long as the predicate applies to the subject. Socrates, while he is sitting, sits necessarily. Nevertheless Socrates could still have not been sitting at the moment when we was sitting. Absolute necessity applies to those things which cannot be any other way than they are. These things may be eternal or not; for example fire is not an eternal being but it is absolutely necessary that it be warm (when it exists) since if fire were not warm it would not be fire. On the other hand, eternal beings may have absolute necessity in the sense that "God is good." Contingent things have hypothetical necessity: they are necessarily existent as long as they exist, but they might be very well not have

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[201] 36.17-19

[202] His solution is also setup in terms of definite and indefinite truth (39.1-7):
In the case of things that are contingent … it is not differentiated that either the assertion or the denial is true or false determinately [ἐπὶ δὲ τῶν ἐνδεχομένων ... ἀδιάφορον ἢ τὴν κατάφασιν ἢ την ἀπόφασιν ἀληθῆ εἶναι ἢ φευδῆ ὡρισμένως]. The whole (ὅλον), 'Tomorrow there will be or there will not be a seafight,' is definitely necessary, for either there will be at this hour or there will not be [a seafight]. But if we divide it up and say determinately 'There definitely will be' [or 'There will not be'], it is no longer true, since [the thing] itself is indefinite. That is the solution to the problem [διελόντας δὲ εἰπεῖν ὡρισμένως ὅτι πάντως ἔσται [ἢ ουκ ἔσται] οὐκέτι ἀληθές, ἐπειδὴ γὰρ αὐτὸ τὸ [πρᾶγμα] ἀόριστον. Και αὕτη μὲν ἡ λύσις τῆς ἀπορίας].

[203] 38.14-31

existed.

VI.   Al-Fārābī (870-943 CE)

Muḥammad Abū Naṣr al-Fārābī is known as the second teacher [*al-muʿallim al-thānī*], Aristotle being the first.[204] His influential works on logic, metaphysics, language, music, and mathematics place him in the top caliber of Arabic intellectuals. He studied alongside Yaḥyā under Abū Bishr ibn Mattā, the scholarch of the Baghdad philosophical school, and alongside Yaḥyā, who was about 20 years his junior. He composed a lengthy commentary on *De Interpretatione*, extant today.[205]

Concerning the problem of future contingents, al-Fārābī, much like Boethius and Ammonius and Stephanus before him, frames his discussion in terms of definite [*ʿalā al-taḥṣīl* or *muḥaṣṣal*] and indefinite truth [*lā ʿalā al-taḥṣīl* or *ghayr muḥaṣṣal*].[206] Concerning how al-Fārābī understands these operators, there is substantial disagreement. Rescher argues not only that al-Fārābī is an adherent of the non-traditional interpretation, but that he invented it.[207] Zimmerman, reading al-Fārābī in line with the traditional interpretation, writes that Rescher's claim is "a manifest error."[208] Gaskin agrees with Zimmerman, but he writes that al-Fārābī does include a solution that aligns with the non-standard interpretation later on in the commentary, although he offers it not as an interpretation of Aristotle but rather *in propria voce*.[209] Adamson, developing Gaskin's claim, argues that we can find two solutions in al-Fārābī; the first solution, offered as

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[204] Druart, Therese-Anne, "al-Farabi."

[205] Edited by Kutsch and Marrow (*Sharḥ al-Fārābī li-Kitāb Arisṭūtālīs fī al-ʿibārah = Al-Fārābī's Commentary on Aristotle's De Interpretatione*, Kutsch and Marrow (eds.) (Beirut, Imprimerie Catholique, 1961)) and translated into English with introduction by Zimmerman (*Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*).

[206] We should not read much into the lexical root of these terms in attempting to understand what al-Fārābī means by them, as they are not his; Isḥāq ibn Ḥunayn uses terms like *muḥaṣṣal* and *ghayr muḥaṣṣal* to translate ἀφωρισμένως and ἀόριστος, respectively (see for example *Categories* (=*Maqūlāt*) 12b39 and *On Interpretation* (=*Kitāb al-ʿibāra*) 16b14; 16a32). It is worth noting the disparate nature of the two roots. The Arabic root of *muḥaṣṣal* and *ghayr muḥaṣṣal* is ḥ ṣ l, which can mean to attain, to occur, or to result. ἀόριστος and ἀφωρισμένως derive from ὁρίζω which means to delimit, to partition, or to divide. The ἀ prefix in ἀόριστος means without, thus meaning without division or without delimitation.

[207] Nicholas Rescher, "An interpretation of Aristotle's doctrine of future contingency and excluded middle," 45-6. He also contends that Averroes (d. 1198 CE), Thomas Aquinas (d. 1274 CE), Duns Scotus (d. 1308 CE) and William of Ockham (d. 1374 CE) adopted what he calls the 'Farabian' interpretation.

[208] Zimmerman, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, lxviii.

[209] Gaskin calls his interpretation the 'realist' one. Gaskin, *The Sea Battle and the Master Argument*, 329-330.

an interpretation of Aristotle's response to the problem of future contingents, is traditional in that it argues that contradictory pairs about future contingent statements do not distribute truth and falseness between them.[210] The second solution, posited *in propria voce* to the problem of divine foreknowledge, lines up with the non-standard interpretation in that it argues that future contingent statements do have truth-values, but remain nonetheless contingent (because the truth-values that apply to future contingent propositions are special in that they are non-determining).

How to understand al-Fārābī's solution to the problem of future contingents is not our goal here. We are however interested in his treatment of the problem of divine foreknowledge, which begins at section 98:[211]

> … someone might ask about the knowledge of God Almighty [*'ilm allāh*]: does He know the truth of one of the opposites on matters of possibility [*aḥad al-mutaqābilayn fī al-umūr al-mumkina*]? If He does, how is truth allocated to one of the opposites in His mind [*'indahu*] (may he be exalted!)? Is it to His mind and according to His knowledge of it true definitely or not [*'alā al-taḥṣīl aw lā*]? If not definitely, it would be without definiteness to His mind [*'indahu*] as to ours. As a result, God Most High would not know which part of a pair of oppsosites on possible affairs in the future will come true, the affirmative or the negative one [*lā ya'lamu fī al-umūr al-mustaqbila al-mumkina ayy yaḥṣulu ḥāl al-mūjab aw al-sālib*]. Such affairs would be unknown (*majhūla*) to God Most High. Hence God Most High would not know things before they come to be [*qabla kawnihā*]. This is absurd and unacceptable [*dhālika shan' wa ghayr maqbūl*]. All religions have it differently [*al-milal kulluhā wārida bi-ghayr dhālika*], and it would seem a detrimental [*ḍārr jiddan*] belief for people to hold. If so, and if God Most High knows the truth of one of the opposites definitely, then its indefiniteness [*'adam al-taḥṣīl*] could not be part of its own nature [*min nafs ṭabī'at al-amr*]. Our ignorance of such matters would not be caused by their nature but by a deficiency [*naqṣ*] in our nature. If so, one of the opposites is in itself true definitely [*fa-ṣadaqa aḥad al-mutaqābilayn huwa fī dhātihi 'alā al-taḥṣīl*] even though we do not know it [to be true]. Thus we would have a case of indefiniteness to our minds just as with necessary matters we do not know about. If we accept this, the dilemma [*al-shakk*] mentioned by Aristotle returns, namely, that if it is known to be true that something I will happen, it cannot not happen [*lā yumkinu an lā yakūna*]. Thus the existence of what exists in the future [*wujūd mā yūjadu fī al-mustaqbal*] will be necessary if an anterior statement is true [*matā kāna al-qawl 'alayhi qabla dhālika ṣādiq ḍurūrī al-wujūd*]. Everything will be intrinsically necessary again [*fa-ta'ūdu al-ashyā' kulluhā fa-takūnu dūrūriyya fī anfusihā*], being possible only in terms of our knowledge [*bi-ḥasbi 'ilminā faqaṭ*]. Free will [*al-irāda*], deliberation [*al-ru'ya*], and everything else that Aristotle has mentioned will again be eliminated (*tartafi'u*). All religions [*al-milal*] will be committed to the conclusion that man does not choose to do whatever he does. Whatever

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[210] Adamson, "The arabic sea battle: al-Fārābī on the problem of future contingents."

[211] The English translation is Zimmerman's (*Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, 92-93). The Arabic text is from Kutsch and Marrow's edition (*Sharḥ al-Fārābī li-Kitāb Arisṭūtālīs fī al-'ibārah = Al-Fārābī's Commentary on Aristotle's De Interpretatione*, 97-98). Our citations refer to the Arabic edition, unless otherwise indicated.

punishment befalls him in this world or the next will not be on account of acts of free will and choice [*irādatihi … ikhtiyārihi*]. It would follow that God Most High, who rewards and punishes, acts unjustly [*ghayr 'ādil fī fi'lihi*]. This again is altogether absurd [*shan'a*], rejected [*mustankira*] by all religions and very, very detrimental for people to believe [*ḍārra an ya'taqida al-nās dhālika jiddan jiddan*].

Compared to the problem of future contingents, which al-Fārābī deals with at length in his commentary proper on *De Interpretatione*, his discussion of the problem of divine foreknowledge, is noticeably shorter and less developed, almost as if it were attached as an appendix.[212] Al-Fārābī sets up the problem as a dilemma; God must either know the outcomes of future events definitely or indefinitely. If His knowledge of them is indefinite, then He does not know which member of the contradictory pair will be true, and which one will be false.[213] He calls this outcome absurd and unacceptable, and a detrimental belief for people to hold.

On the other hand, if God knows the outcomes of future events in a definite manner, then it means that one of the member statements of the contradictory pair is true, and the other false. Otherwise it would be impossible for God to know one member to be true, since there would be nothing true for Him to know as true. If one of the statements is true, and the other false, then the event will necessarily occur or not occur, depending on which member is true and which member is false. Thus it is either true that there will be a sea-battle in 10,000 years from now, or it is not true, and all of the deterministic absurdities that Aristotle points out, plus some additional ones, are back in play.[214] Al-Fārābī presents his solution:[215]

> We must find a solution to these dilemmas which does not entail anything objectionable on account of reality [*amr al-mawjūd*], common sense [*al-mashhūr*], or religion [*al-milal*] …, the right answer lies in arguing that if something follows of necessity from something else, this does not mean that it is necessary in itself [*laysa luzūm al-shay' 'an al-shay' ḍarūrī wa huwa an yakūna al-shay' al-lāzim ḍarūrī fī nafsihi*]. For if it is true to affirm something, it follows of necessity that it is the case [*dhālika anna ṣidq al-qawl al-mūjab yalzamu 'inda ḍarūrat wujūd al-amr*]. Yet it does not follow that its being the case is intrinsically necessary [*wa laysa yalzamu min dhālika an yakūna al-amr ḍarūrī al-wujūd fī nafsihi*]. What follows is that its following from the truth of the affirmation is necessary. It is not the case that, if something follows from

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[212] The commentary proper extends from 81.21-91.21; al-Fārābī discusses the problem of divine foreknowledge at 97-101.

[213] This suggests that, at least in this section of the text, al-Fārābī reads the meaning of indefinite according to the standard interpretation. If a contradictory pair distributes truth indefinitely, then neither member has an assigned truth-value. Thus God cannot know which one will happen, since in a sense neither will happen because neither member of the pair is true.

[214] Namely the threats posed to providence; 98.18.

[215] 98.20-99.14 in the Arabic edition; 93-94 in Zimmerman's translation.

something else necessarily, the thing that follows is itself necessary [*wa laysa idhā kāna al-shay'*
yalzamu shay' ākhir luzūm ḍarūrī yakūnu fī nafsihi ḍarūrī]. Take the case of intrinsically possible
conclusions [*al-natā'ij allatī hiya mumkina fī dhawātihā*]. They follow necessarily in the
syllogisms [*al-qiyāsāt*] that lead to them, yet a conclusion following of necessity is not
intrinsically necessary [*min ghayr an takūna al-natā'ij al-lāzima ḍarūra ḍarūriyya fī anfusihā*].
For its possibility is not eliminated [*imkānuhā lā yartafi'u*] by the necessity with which it follows
from its premises [*bi-ḍṭirāriyyat luzūmihā 'an al-muqadimmāt*]. Similarly, if it is true for us to
state that it will be raining tomorrow and that Zayd will set out on a journey tomorrow, it follows
of necessity from the truth of our statement that it will be raining tomorrow and that Zayd will set
out on a journey tomorrow. But this is not to deny that the travelling done by Zayd intrinsically
results from Zayd's free will and from the fact that it is impossible that something done by Zayd
should be intrinsically necessary or that his power to refrain from travelling should be eliminated
[*min ghayr an yakūna al-safar al-kā'in min Zayd fī nafsihi lā 'an irādat Zayd wa lā 'an annahu*
yartafi'u min an yakūna min Zayd fī nafsihi ḍarūrī aw 'an Zayd tartafi'u qudratuhu 'alā an lā
yusāfira]. The fact is that Zayd will have the possibility of staying at home. All that is involved in
the way of necessity is that Zayd's leaving home follows of necessity from the truth of the
statement [*wa innamā al-ḍarūrī fīhi ḍarūriyyat luzūm khurūjihi min baytihi 'an al-qawl al-ṣādiq*].

Al-Fārābī's uses the difference between simple and hypothetical necessity to defuse the
dilemma. Somethings are necessarily true by virtue of themselves [*fī anfusihā*]. Other things are
made necessary by other things, but in and of themselves their being is not necessary, but
contingent. He offers the example of an intrinsically contingent conclusion that follows
necessarily from true premises. The conclusion is in itself contingent, but its following from the
premises is necessary. The premises themselves are contingent; thus when they are not true the
conclusion does not follow. Thus if it is true that Zayd will journey tomorrow, then the
occurrence of Zayd's journeying is necessary. The occurrence of Zayd's journeying, however, is
not necessary when taken alone. It is contingent, that is to say that it could have been otherwise;
Zayd could have stayed at home. When the statement "Zayd will journey tomorrow is true," it
necessarily follows that Zayd journeys tomorrow. Al-Fārābī's solution escapes the threat of
logical determinism. The truth or falsity of future contingent statements does not destroy the
intrinsic necessity of the things they describe.

Applied to the problem of divine foreknowledge, this means that although what God
foreknows as true must and will be true, it still could have turned out false. This suggests that
this solution, which al-Fārābī seems to put forth as his own, aligns with the non-standard
interpretation: future contingents have distributed truth-values, but these truth-values do not
jeopardize the contingency of the events they describe. Wisnovsky and Adamson discuss how al-

Fārābī's solution (in the Arabic tradition) anticipates certain aspects of Avicenna's metaphysics, namely the concept of intrinsic and extrinsic necessity and its modal implications.[216] Al-Fārābī does not mention the atemporality of God nor the non-equivalence of knower and known in his solution. This absence has led certain scholars, like Zimmerman, to conclude that "the rather sophisticated theorem of Iamblichus did not survive the hazards of translation and transmission in intelligible form."[217]

This style of solution, using the difference between simple and hypothetical necessity that Aristotle (most clearly) hashes out in *Metaphysics* V.5 is familiar; we saw versions of it in Ammonius (135.25-30; 137.1-6; 153.13-21), Boethius (Book V, Prose 6), and Stephanus (38.13-33).[218] Al-Fārābī, however, realizes an important consequence brought on by such a distinction: "a state of affairs can become one of necessary existence, having had, up to the time of its existence, the possibility of not existing and of not having existed."[219] This, as Adamson notes, represents a departure from the classical or statistical conception of modality according to which the necessary is what always happens, the possible (i.e. the contingent) is what sometimes happens and the impossible is what never happens.[220] Despite its innovative nature, al-Fārābī is not convinced of this solution, rendering his discussion of the problem of divine foreknowledge inconclusive. He writes that whether something which always exists can have the possibility of not existing (and conversely something never existing having the possibility of existing) "is something about which philosophers in antiquity disagreed" (96.20-1). He characterizes it as a dissatisfying solution which "more helpful than that of its opponents," from "a religious point of view" (100.25-27). It seems that al-Fārābī is not particularly invested or interested in the problem of divine foreknowledge. His discussion yields no conclusion and it is notably shorter and less developed than his treatment of the problem of future contingents. That his views on the problem

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[216] Wisnovsky, *Avicenna's Metaphysics in Context*, 222-3; Adamson, "The Arabic sea battle: al-Fārābī on the problem of future contingents," 182-184

[217] Zimmerman, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, xciv.

[218] 135.25, 137.1-6, 153.13-21 and in the case of Ammonius, Book V P6 in Boethius, and 38.13-33 in Stephanus.

[219] 99.23-25

[220] Adamson, "The Arabic Sea Battle: al-Fārābī on the Problem of Future Contingents," 182-184. See Hintikka (*Time & Necessity : Studies in Aristotle's Theory of Modality*, 27-31) for more on Aristotle and the statistical model of modality. For different medieval conceptions of modality, see Knuuttila (Knuuttila, Simo, "Medieval theories of modality," *The Stanford Encyclopedia of Philosophy* [Summer 2017], https://plato.stanford.edu/archives/sum2017/entries/modality-medieval/).

of divine foreknowledge are added on to the end of his commentary reinforces this impression of disinterest. It also seems that al-Fārābī does not consider it a proper philosophical question. When presenting the solution, he writes that he seeks a solution that "does not entail anything objectionable on account of reality, common sense, or religion."[221] If al-Fārābī saw the problem as solely concerning *falsafa*, then there would be no need for the solution to be religiously acceptable. Furthermore, when discussing the possibility that God be ignorant of the outcomes of future events, he stops short of writing that such a possibility is wrong or impossible. He rather writes that it "all religions have it differently, and it would seem a detrimental belief for people to hold."[222] This suggests that al-Fārābī in his commentary approaches the problem of divine foreknowledge as a problem which concerns people of faith, and not necessarily philosophers.[223]

VII.   Conclusion

This sums up our presentation of the problem of divine foreknowledge and the problem of future contingents based on Aristotle's *De Interpretatione* and their reception through late antiquity and the early Arabic middle ages. We examined four thinkers after Aristotle: Boethius, Ammonius, Stephanus, and al-Fārābī. As we saw, all four thinkers frame their discussion of the problem of future contingents in terms of definite and indefinite truth. Although it is unclear what the technical definitions of these terms are, it seems that at the very least indefinite knowledge is knowledge that accepts contingency, whereas definite knowledge does not. With respect to the problem of divine foreknowledge, there are four ideas which we see represented in our authors. The first of these is the idea that divine knowledge is atemporal; there is no past, present, nor future in divine knowledge, which is eternal and unchanging and knows all things at

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[221] 98.20-23

[222] 98.6-7

[223] That al-Fārābī considers the problem of divine foreknowledge as a predominantly theological issue may explain his relative disinterest towards it. Al-Fārābī's problems with *kalam* are well documented (Zimmerman, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, cxiv). In his *Iḥsā' al-'ulūm* (ed. Uthmān Amīn [Cairo: Dār al-Fikr al-'Arabī, 1949], 108-109)*,* al-Fārābī critiques *kalām* and its practitioners (the *mutakallimūn*) as engaged in a self-serving project that is primarily aimed at inventing arguments to preserve the dogmas of religion; *kalām* on its own does not discover anything new nor engage in genuine inquiry.

once. We saw that Boethius and Ammonius make use of this idea in order to show why divine knowledge must be determinate; God's knowledge does not "parallel the flux of things;" rather he knows all things in "a single flash of intuition." Stephanus and al-Fārābī do not include this idea in their discussion.[224]

Secondly, Stephanus and Ammonius include a solution which they attribute to Iamblichus to explain how the divine can know indefinite things in a determinate way: since things can be known in a manner superior to their natures, God can know changing things in way commensurate with His immutable self. Boethius also uses a similar idea in order to argue that knowledge conforms to the nature of the knower, and not to the nature of the object of knowledge. Thirdly, Stephanus accepts that it is the contents of divine knowledge which cause divine knowledge to be the way it is. If God knows Socrates as walking tomorrow, this is because it is the case that Socrates is walking tomorrow. Boethius thinks it preposterous that divine knowledge be caused by its objects. Ammonius writes that divine knowledge is not the cause of the occurrence or non-occurrence of its objects, but he — unlike Stephanus — does not claim the reverse to be true.[225] Al-Fārābī does not address the matter.

Finally, all four authors also make use of Aristotle's distinction between simple and hypothetical necessity to explain how God's determinate knowledge of inherently indeterminate things does not destroy their contingent nature. Although it follows from divine knowledge that whatever God knows as existing must exist, this does not mean that the existing thing is intrinsically necessary; instead, the necessity of its occurrence is extrinsic: it is made necessary by God's knowledge, not by virtue of its own nature. Thus although things must occur because God knows them as occurring, they nevertheless could have not occurred. Al-Fārābī realizes that this idea opens the door for a departure from the statistical model of possibility towards a more purely modal one.

Solutions like Ammonius' and Boethius' are vulnerable to an objection. This is because Boethius and Ammonius hold that God's knowledge is immutable and infallible. If God knows Socrates as walking tomorrow, then, although there is no logical contradiction in Socrates not

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[224] To the contrary, al-Fārābī at points describes God's knowledge as though it existed in in time, i.e. it experiences a past, present, and future, see for example 100.10.

[225] 136.25-30

walking tomorrow (since Socrates' walking is intrinsically contingent), there is still nothing that Socrates can do today to make it such that it he does not walk tomorrow, because God knows him eternally and immutably as walking tomorrow. In this sense the future is determined in the past/present, and the worries posed by our authors (futility of deliberation, prayer, etc.) are not resolved. Contingency is real, because there would have been no logical contradiction had Socrates stayed home, since Socrates' walking is intrinsically contingent. But it is only a superficial sort of contingency: there is no possible world in which God would know Socrates as not walking, since there is no possible world where God is different from the way He already is, since that would imply an unactualized potential and change in divine knowledge, which for Boethius and Ammonius is impossible.

Stephanus and Al-Fārābī fare better in the face of this critique. This is because they do not preclude the possibility of change in divine knowledge. Stephanus writes that the status of the thing determines God's foreknowledge of it, i.e. God knows Socrates as walking tomorrow because it is the case that Socrates is walking tomorrow. If they accept that God's knowledge could have been different, or if they accept that it can change if the thing in question changes (i.e. something happens and it is no longer the case that Socrates will walk tomorrow), then their answers will suffice to escape the core concerns of the problem.

Chapter 3: An Analysis of *Fī Ithbāt Ṭabīʿat al-Mumkin*

I.   Introduction

With the historical development of the problem of divine foreknowledge completed, we can now analyze Yaḥyā's treatise, *Risāla fī Ithbāt Ṭabīʿat al-Mumkin* (*Treatise on the Affirmation of the Nature of the Contingent*). We divide the seven chapters of the text into four sections. In the first section (Chapters 1-2; 65.12-67.6), Yaḥyā presents the determinist proof from divine foreknowledge and from future contingent propositions as the two most compelling proofs put forth by the deniers of contingency. We will call this the *expository* section. In the second section (Chapters 3-5; 67.7-78.16), Yaḥyā accomplishes three things. He first invalidates the proof by demonstrating the falsity of its foundations (*ususuhā*, 64.7). Second, he analyzes the sources of error which may lead one to accept the proof as valid, and thirdly he offers pointers for how to avoid these errors. This is the *critical* section. In the third section (Chapter 6; 78.17-81.8), Yaḥyā sets out forth his positive doctrine regarding the nature of the contingent. We label this the *constructive* section. The final section (Chapter 7; 81.9-) centers around a lemmatized commentary on *De Interpretatione* 9, which we translated but are not examining here. Our analysis of the text aims to answer three questions. First, how does Yaḥyā understand and refute the deterministic proof from divine foreknowledge? Second, how satisfactory is his refutation? Finally, how does his account compare to that of the other commentators and thinkers that we examined in Chapter 2?

Let us begin by mentioning a few points about the text: it is critically edited in Ehrig-Eggert and in Khalifat.[226] It is an epistle addressed to a certain Abū Bakr Aḥmad ibn Muḥammad ibn ʿAbd al-Raḥmān ibn al-Ḥasan ibn Quraysh. Yaḥyā divides each of the text's seven chapters into chapters [*fuṣūl*] which are in turn subdivided into various sections [*aqsām*] and parts [*abwāb*]. Yaḥyā does not label his treatise a commentary. He rather entitles it a *Treatise on the*

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[226] ibn ʿAdī, Yaḥyā, "*Nuskha mā kataba bihi Yaḥyā ibn ʿAdī ilā Abī Bakr Aḥmad ibn Quraysh fī ithbāt ṭabīʿat al-mumkin*," in *Maqālāt Yaḥya Ibn ʿAdī al-Falsafiyya*, ed. Sahban Khalifat (Amman: University of Jordan Press, 1988), 337-339; "*Nuskha mā kataba bihi Yaḥyā ibn ʿAdī ilá Abī Bakr Aḥmad ibn Quraysh fī ithbāt ṭabīʿat al-mumkin*," ed. Carl Ehrig-Eggert, *Zeitschrift fur Geschichte der Arabischen-Islamischen Wissenschaften* 5 (1989): 63-97. Our citation of the text follows the pagination of Ehrig-Eggert's edition.

Affirmation of the Nature of the Contingent [*Risāla fī Ithbāt Ṭabīʿat al-Mumkin*]. It is a treatise in six chapters with a commentary constituting the majority of the seventh. The first six chapters of the text are dedicated to explicating and refuting the determinist proof from foreknowledge. Yaḥyā formally (i.e. with lemma) comments on Chapter IX of *De Interpretatione* in the seventh chapter of the text. We now turn to examining each section in further detail.

II. Section 1: The Expository Section (Chapters 1 and 2; 65.12-67.2)

In the opening section, Yaḥyā recounts the various positions among "the companions of theorists" [*ahl al-naẓar*] concerning the contingent.[227] There are those who affirm its existence, and accept that there are things whose existence and non-existence are both possible.[228] The second group argue that all things are necessary [*ḍarūriyya*, 65.15], and there is nothing for which existence and non-existence are both possible.[229] Despite their disagreements, both groups agree that the existence or non-existence of things in the present or the past is necessary. For example, if Zayd is walking to the market right now, then it is necessary that Zayd is walking to the market right now. Likewise, if Zayd walked to the market yesterday, then it is necessary that he walked to the market yesterday. This is the same for the negations of these statements (i.e. Zayd is not presently walking to the market, Zayd did not walk to the market yesterday). Both groups agree that there is no contingency in events about the present or the past. The

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[227] Yaḥyā uses a *kalām* term here, ʿ*ahl al-naẓar.* ' The complete term is *ahl al-naẓar wa-l-istidlāl*, 'The people of speculation and discovery' (Haleem Abdel Haleem, "Early Kalām," in *History of Islamic Philosophy*, eds. Seyyed Hossein Nasr and Oliver Leaman [London: Routledge, 1996], 155.

[228] This is presumably Yaḥyā's camp, as well as Aristotle's.

[229] This other group refers to the proponents of determinism, such as the 8th/9th century theologian Jahm b. Safwān, whose doctrine of divine omnipotence entailed that all things occur according to God's eternal and unchanging will. It is likely that Yaḥyā was familiar with such *mutakallimūn*, given his intellectual milieu and interest in theology. Since Yaḥyā's circles had access to Galen's works, it is also likely that Yaḥyā was aware of the staunch physical determinism of the Stoics (Zimmerman, *Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, lxxxii). For more on Stoic determinism, see Baltzly (Baltzly, Dirk, "Stoicism", *The Stanford Encyclopedia of Philosophy* (Spring 2019), https://plato.stanford.edu/archives/spr2019/entries/stoicism/. For more on the different early *kalām* schools and their positions concerning necessity and possibility, see Haleem ("Early kalām", 79-80) and Wolfson (*The Philosophy of the Kalam* (Cambridge: Harvard University Press, 1976), 655-663). Yaḥyā also composed a short treatise refuting the Ashʿari occasionalist doctrine of *kasb* (acquisition), suggesting he was definitely involved in *kalām* discussions surrounding human agency and its relation to the divine (Khalifat, *Maqālat Yaḥya Ibn ʿAdī al-Falsafiyya,*, 20).

disagreement concerns the nature of contingency in future statements, e.g. Zayd will go to the market tomorrow or Zayd will not go to the market tomorrow.

Yaḥyā writes in the second part of the first chapter that those who deny the existence of contingency have utilized many proofs to demonstrate their point. The strongest of these proofs are two arguments, one of them based on divine foreknowledge, the other on the necessary truth of one member of a contradictory pair and the necessary falseness of the other.[230] Yaḥyā writes that he will personally refute the proof based on divine foreknowledge, while he will recount Aristotle's discussion with respect to the proof based on statements about future contingents.[231]

In Chapter 2 of the treatise, after mentioning the two strongest proofs against the reality of the possible, Yaḥyā presents the determinist proof from divine foreknowledge. He writes that it is the strongest of the proofs [*aqwā ḥujaj*, 66.7] against contingency, which suggests that Yaḥyā finds the problem of divine foreknowledge more threatening than the problem of future contingents. This is why he makes it the central focus of his treatise on contingency. One reason for this may be that Yaḥyā views the problem of future contingents as a mere problem in logic; our metaphysical intuitions about the reality of possibility have revealed a misstep in our logic, since we cannot treat contradictory pairs about the future (e.g. Zayd will go to the market tomorrow and Zayd will not go to the market tomorrow) in the same way we treat statements about the past or the present with respect to their division of truth and falsity. Hence this calls for a relatively metaphysically toothless revision of how we conceptualize the truth-values of future contingent statements. We may simply restrict the principle of bivalence to exclude future contingents (if we are supporters of the standard solution), or we may accept that future contingents have a special type of non-determining truth-value. This is how al-Fārābī seems to view the problem (84.6-23). On the other hand, the problem of divine foreknowledge is not reducible to a mere logical misstep, but rather demonstrates how our intuitions about contingency implicate a range of other matters with serious theological and metaphysical consequences, such as the immutable and infallible status of God's knowledge and its relation to

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[230] I.e. the problem of future contingents or the sea-battle problem.
[231] Al-Fārābī does the same in his commentary on *De Interpretatione* IX: he presents the solution to the sea-battle problem as Aristotle's, but he presents the solution to the problem of divine foreknowledge as his own (Adamson, "The Arabic sea battle: al-Fārābī on the problem of future contingents, 183).

human free will, already a controversial topic in the theological circles of Yaḥyā's day. The question of God's justice is also implicated.[232] Our answer is not a reconceptualization of the relation of logical truth to necessity; it rather requires that we investigate the nature of divine knowledge and its relation to events in the world. If God knows the outcomes of our future actions, then how is it fair that He judge us for them? In the problem of future contingents, it is our understanding of the logic of contradictory pairs about future contingent events which is at stake. In the problem of divine foreknowledge, matters of great theological and metaphysical import are in play.

Yaḥyā shares his focus on the problem of divine foreknowledge with Boethius, Ammonius and Stephanus. Boethius calls the problem of divine foreknowledge 'too much of a paradox and a contradiction' [*adversari ac repugnare*; Book V, Prose 3] and dedicates the majority of the final book of the *Consolatione* to discussing it.[233] Ammonius, describing this problem, says that 'it is so troublesome and difficult to face that many of those who are thought most expert are led off to the belief which destroys the contingent [οὕτως ὄν πραγματειώδης καὶ δυσαντίβλεπτος, ὥστε καὶ πολλοὺς τῶν ἐπιστατικωτέρων εἶναι δοκούντων ἀπάγεσθαι πρὸς τὴν ἀναιροῦσαν τὸ ἐνδεχόμενον δόξαν ...] (132.7-10). Stephanus also has similar things to say. Hence Yaḥyā is more like his late-antique predecessors and less like his contemporary al-Fārābī with respect to their approach to the problem. All but al-Fārābī include some language about how difficult the problem is, and all dedicate more effort to discussing it.

Yaḥyā sets up the proof from divine foreknowledge in the following way: it is non-controversial that God is knowledgeable in an immutable way of everything which exists and everything which is coming to exist [*al-mawjūdāt wa-l-kā'ināt*, 66.8-9]. That is to say it is not the case that He was once ignorant of these things but then became knowing of them [*lam yakun ghayr 'ālim thumma ṣāra ba'da dhālika 'ālim*, 66.9]. Since divine knowledge is infallible, God must know these things as they actually are [*'alā mā hiya 'alayh*; 66.10]; He cannot know a proposition to be true if it is false, nor vice versa. This means that the state [*ḥāl*, 66.11] of the things which are known [*ma'lūmāt*, 66.11] must necessarily correspond to the state of their

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[232] i.e. the problem of theodicy.
[233] Lit. 'it seems … to resist and oppose so much'; 'Nimium,'… 'adversari ae repugnare videtur…'

Knower, i.e. God [*fa-yajibu ḍarūratan an yakūna ḥāl al-maʿlūmāt muwāfiqah li-ḥāl al-ʿālim bihā*, 66.10-11]. Since God's knowledge is ontologically unchanging [*thābitat al-wujūd ghayr mutaghayyira*, 66.12], it follows that the *maʿlūmāt* are similarly unchanging. This means that if God knows something as existing, then He cannot know it as non-existing, and thus the thing cannot not exist. Likewise if He knows something as not existing, then it cannot come to exist without threatening the immutability and infallibility of His knowledge. Since He knows all things (His knowledge is all-encompassing), it follows that nothing which He knows as existing can come to not exist, nor can anything which He knows as not existing come to exist. Nothing changes in its modal state, and anything which cannot undergo change in its existential state is not contingent [*kullu mā taghayyara ḥāl wujūdihi aw ʿadamihi mumtaniʿ laysa huwa mumkin*, 66.19].[234] If God knows Zayd as going to the market tomorrow, the ontological status of Zayd's going to the market cannot change without threatening the immutability or infallibility of God's knowledge. That is, either God knows Zayd as going, but Zayd in fact does not go, in which case God's knowledge was not really knowledge but rather false conjecture; or God knows Zayd as going, but when Zayd does not go, then God's knowledge changes from knowing him as going to knowing him as not going.

If God's knowledge cannot change, then there is no contingency in Zayd's market trip, since contingency (presumably) requires a change in modal status.[235] Given that God knows the occurrence or non-occurrence of all events in this manner, it follows that there is no contingency in future events. Since it has been already accepted that there is no contingency in present and

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[234] This implies that contingent things must be able to undergo change in their existential states. To say that X is contingent is to say that X can change from existence to non-existence, or from non-existence to existence. This is what it is called two-sided possibility, where the possible (or the contingent) is that which is not necessary (i.e. always true or existent) and not impossible (always false or non-existent). This is to be contrasted with one-sided possibility, where the possible is not that which is both not necessary of existence and necessary of non-existence, but only that which is not necessary of non-existence (i.e. possibility is the opposite of impossibility).This type of possibility (two-sided possibility) connects necessity (be it of existence or non-existence) to immutability, and possibility to change. It is for this reason that we have chosen to translate "*mumkin*" and "*imkān*" respectively with "contingent" and "contingency" Since Yaḥyā seems to be operating with a two-sided understanding of possibility, "contingent" and "contingency" better capture the doubly-bound nature of Yaḥyā's conception of *imkān* than "possible" and "possibility."

[235] Yaḥyā is yet to give his positive doctrine on possibility, but we shall see in Chapter 6 of the treatise that existent things which are contingent are things which at some point did not exist but then came to exist (or vice versa; they at some point do exist and then do not). Necessarily existent things are things which exist and have never not existed and will never not exist, while necessarily non-existent (i.e. impossible) things are things which have never existed and will never exist.

past events, it follows that there is no contingency in any event. Thus nothing is contingent. If nothing is contingent, then the nature of the contingent is not present in anything, i.e. it is not real, and the proof's sought-after conclusion is attained.

Yaḥyā's phrasing of the problem rests on the immutability and infallibility of God's knowledge. God's knowledge must know things according to how they actually are [*'alā mā hiya 'alayh*, 66.10]. His knowledge is of necessity [*ḍaruriyya*, 66.12] insofar as it is stable in its existence and unchanging [*thābitat al-wujūd ghayr mutaghayyira*, 66.12]. This suggests that Yaḥyā understands "necessary" [*darūrī*] and necessity [*ḍarūriyya*] as entailing (at least) immutability. This further suggests that Yaḥyā's is using necessity in line with Aristotle's fourth sense which we discussed in Chapter 2, i.e. that which cannot be different from how it is (*Metaphysics* V.5, 1015b10-1015b15). The problem is alleviated if we strip divine knowledge of either its infallibility or its immutability. If God knows Zayd as walking to the market tomorrow, but God may be wrong, then it is possible that Zayd stay at home and his going is not determined. Likewise, if God's knowledge were not necessary, i.e. immutable, then God could come to know Zayd as not walking after having known him as walking, and the contingency of Zayd's going would be preserved.

III. Section 2: The Critical Section (Chapters 3-5; 67.7-78.17)

With the proof from divine foreknowledge presented, Yaḥyā turns to explaining its foundations [*usus*, 67.8] and its refutation. Yaḥyā considers the foundation of the proof to be the claim that foreknowledge [*sābiq al-'ilm*, 67.10] is a cause which entails the necessity of things [*sabab mūjib ḍarūriyyat al-umūr*, 67.11]. If he refutes this claim; if he proves that foreknowledge is not a cause of the necessity of things, then the deterministic conclusion of the proof will not follow. Yaḥya's refutation strategy is to provide an exhaustive list of the types of causes which exist in the world, and then show that the relationship between divine foreknowledge and the *ma'lumāt* (the objects of divine foreknowledge) does not fall under any

category of causation.[236] If it does not fall under any category of causation, then it (foreknowledge) cannot be a cause of the necessity of things in the world, and the proof fails.

We will not go through the details of each of Yaḥya's refutations here, since they are ultimately ineffective at treating the core of the problem.[237] This is because Yaḥyā refutes in Chapter 3 a proof distinct from the one he put forth in Chapter 2. When presenting the determinist proof from divine foreknowledge in Chapter 2, Yaḥya writes that the reason why the existents of the world must correspond to God's knowledge of them is because God's knowledge is properly knowledge only if it correctly corresponds to how the existents are in the world (66.9-10). If God knows X as Y, then X must actually be Y since God's knowledge is infallible. Because God's knowledge is also immutable, then it follows that X is and always has been Y. As we saw in Chapter 2, this is a standard formulation of the problem; if God knows future contingent propositions in a definite manner, then it means that future contingents have definite (fixed) truth values, and the deterministic concerns of the sea-battle problem return. In fact, if future contingent propositions have fixed truth values in the present, then it is irrelevant if they are known by any agent; determinism will be true.

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[236] This strategy, where to show that X is not Y, one lists out all the types of Y and then shows that X is not any one of the types of Y, is one that Yaḥyā employs elsewhere, for example in his Treatise on Unity (*Maqālah fī al-Tawḥīd*, ed. Sahban Khalifat [Amman: University of Jordan Press, 1988, 337-374). There Yaḥyā argues that God cannot be multiple by providing an exhaustive list of the types of unity and demonstrating that none of them apply to God.

[237] It is however worth noting Yaḥyā's listing the causes as six as opposed to four [67.120. Aristotle classifies causes [αἰτία] into four types: material [matter; ὕλη], formal [form; εἶδος], final [end; τέλος], and efficient [mover; κινουν] (*Physics,* II.3). Plato discusses the concept of a paradigmatic cause and an instrumental cause in the *Timaeus*; the demiurge uses the Forms as paradigms according to which he creates the world, matter being his instrument (46c-d, 47e-8a and 68e-9a). In this sense there is a principle [a paradigm; παράδειγμα] external to nature which influences and shapes the way it changes. Aristotle, denying that there is a paradigm external to nature which determines its change, vehemently opposed the idea of a paradigmatic cause (Christoph Helmig and Carlos Steel, "Proclus," *The Stanford Encyclopedia of Philosophy* (Fall 2020), <https://plato.stanford.edu/archives/fall2020/entries/proclus/>; Carlos Steel, "Why should we prefer Plato's "Timaeus" to Aristotle's Physics? Proclus' critique of Aristotle's causal explanation of the physical world," *Bulletin Institute of Classical Studies,* supplement, no. 78 [2003]: 179). Late Neoplatonists incorporated the two approaches, considering the causes to be six. For more on the ways in which late-Antique commentators developed and debated the notions of causation found in Antiquity, see Sorabji (*The Philosophy of the Commentators, 200-600 AD* : *a Sourcebook : 400 Years of Transition* : *Logic and Language* (London: Duckworth, 2004), 138) or Remes (*Neoplatonism* (Hoboken: Taylor and Francis, 2014), 80-82). See Gerson (*Aristotle and Other Platonists*. Ancient Commentators on Aristotle (Ithaca: Cornell University Press, 2005), 102-113) for more on the difference between Platonic and Aristotelian natural philosophy. See Wisnovsky ("Towards a history of Avicenna's distinction between immanent and transcendent causes," in *Before and after Avicenna: Proceedings of the First Conference of the Avicenna Study Group*, eds. David Reisman and Ahmed al-Rahim (Leiden: Brill, 2003b), 49-68) for more on the Islamic reception of this difference.

Yaḥyā's refutation in Chapter 3 does not refute the proof as he presents it in Chapter 2. In Chapter 3, Yaḥyā writes that the source [*aṣl*, 67.10] and foundation [*uss*, 67.10] of the proof, which he will demonstrably refute, is that foreknowledge is a cause of the necessity of things [*sabab mūjib ḍurūriyyat al-umūr*, 67.11]: that foreknowledge causally determines the necessary occurrence or non-occurrence of things. This is not what the proof that he presents in Chapter 2 claims, where he writes that this proof holds that the state of the agent of knowledge [i.e. God in this case] must correspond to the state of its objects [*yakūnu ḥāl al-maʿlūmāt muwāfiqa li-ḥāl al-ʿālim bihā*, 66.11] and that God must know things as they actually are [*ʿalā mā hiya ʿalayh*, 77.1-2]. Chapter 3 refutes the claim that God's knowledge causes things to necessarily be how they are. These are two independent claims: the status of God's knowledge may still need to correspond to the status of its objects even if it is not their cause. For example, we can offer a causal account for the existence of a golden ring (i.e. its material, efficient, final, formal, instrumental and paradigmatic causes) without the need to appeal to God's foreknowledge. But if it is true that the ring is cast, then God must know it to be cast, and the ring must be cast, not due to any causal relationship between God's foreknowledge and the ring, but due to the fact that the immutable infallible nature of God's knowledge requires that God's knowledge correctly correspond to the world. The problem as Yaḥyā presents it in Chapter 2 is about God's knowledge determining things by virtue of this correspondence relationship, even if it is not a necessitating cause of them. Yaḥyā's argument in Chapter 3 does not refute the proof he presents in Chapter 2.

It seems that Yaḥyā is conflating a proof for logical determinism with a proof for causal determinism. Logical determinism is the type of determinism implied by the sea-battle problem; singular future propositions are either true, or they are false; thus the events they express must either occur, or not occur, since propositions, true or false, must accurately describe their referents.[238] In other words, if it is not true that right now, either X will occur or X will not occur, then a logical absurdity follows.[239] Causal determinism is the thesis that holds that all events are predetermined (i.e. caused) by environmental physical factors, for example a series of

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[238] This is the correspondence theory of truth which we have encountered before. If the proposition "X is Y" is true, then X must actually be Y. In other words, the truth or falsity of propositions must harmonize with reality.
[239] This absurdity may be that X is neither false nor true, or that X and not X are both true, or both false, etc.

initial conditions and natural causal laws.[240] If God's knowledge causes things to be the way they are, and God's knowledge is infallible and immutable, then everything is the way God knows it to be, and it never could be any other way.

Why would Yaḥyā confuse these two different types of determinism? Al-Fārābī's presentation of the problem is not dramatically different from Yaḥyā's; it presents the concern as a type of logical determinism brought on by the relation between God's knowledge and the state of affairs in the world. His solution also focuses on refuting the logical determinism implied by the problem; he does not discuss a causal relation between God's knowledge and the events in the world (99).

Historically, it makes sense that Yaḥyā would argue that divine knowledge is not a cause of the state of its contents, as philosophers and theologians both during and before his time made such an argument. As we saw in Chapter 2, Stephanus, in his comments on 18a28-9, discusses the relationship between a thing's occurrence and God's knowledge of that thing. He writes that "God's cognition is not the cause of the thing's coming to be [οὐ γάρ ἐστιν ἡ γνῶσις του θεωῦ αἰτία τοῦ γίνεσθαι τὸ πρᾶγμα]; on the contrary, because of the thing, that is the cause of God's knowing in advance" [αἰτιόν εστι τοῦτο τοῦ προγινώσκειν τὸ θεῖον, 36.37-38]. He means that it is not the case that things are the way they are by virtue of God's knowledge of them. Rather, God's knowledge is how it is because of the way that the thing is. Ammonius similarly writes that:[241]

> One must not think that the thing we are calling 'contingent' [ενδεχόμενα] will have a necessary [ἀναγκαίαν] outcome because of the fact that they are known in a definite manner by the gods [ὑπο θεῶν γινώσκεθται ὡρισμένως] : it is not because the gods know them that they will occur necessarily; but since, having a contingent and ambiguous nature [φύσιν ἐχοντα ἐνδεχόμενην καὶ ἀμφίβολον], they will have an end [πέρας] which,

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[240] For example, we can consider the boiling of a pot of water at a certain temperature and pressure. A logical determinist would argue that the boiling of the water had to happen because the proposition "this pot of water will boil" was true before the actual boiling of the water, and true propositions must correctly reflect their contents. A causal determinist would argue that the boiling of the water had to happen by citing a series of causes (i.e. material, efficient, final etc.) to show why the boiling of the water was causally pre-determined. These could include a set of initial conditions (temperature, pressure, the molecular composition of water etc.) and a series of natural laws (presumably physical laws about phase changes and fluid dynamics) in order to explain why the boiling of the water could not not happen, given the obtaining of the relevant initial conditions and physical laws.

[241] 136.25-30

whatever happens, is either so or so [ἢ τοῖον ἢ τοῖον], it is necessary that the gods know how they will occur [ὀπως ἐκβήσεται].[242]

The influential 3rd century CE Alexendrian thinker Origen Adamantius argued that the occurrence or non-occurrence of an event is the cause of God's foreknowledge of it, not vice versa.[243] Yaḥyā's answer is very similar to the answer that Boethius rejects at the beginning of Book V, Prose 3 where he writes that:

> I do not approve the reasoning by which some think to solve this puzzle. For they say that it is not because God has foreseen the coming of an event that *therefore* it is sure to come to pass, but, conversely, because something is about to come to pass, it cannot be hidden from Divine providence… [*neque enim illam probo rationem qua se quidam credunt hunc quaestionis nodum posse dissolvere. aiunt enim non ideo quid esse eventurum quoniam id providentia futurum esse prospexerit sed e contrario potius quoniam quid futurum est id divinam providentiam latere non posse…*]

It is possible that both Yaḥyā and Boethius have Origen in mind. [244] The 11th/12th century Jewish poet physician Judah Halevi (d. 1141 CE) writes in his *Kuzari* [*The Book of Proof and Evidence in Support of the Abased Religio*n; *Kitāb al Ḥujja wa-l-Dalīl fī Naṣr al-Dīn al-Dhalīl*] that some *mutakallimūn* believe that God's knowledge of a thing is not a cause of the generation of that thing. [245] It is unclear which *mutakallimūn* he has in mind.[246] The Jewish theologian Saadia Gaon (*Saʿīd ibn Yūsuf al-Fayyūmī*; d. 942 AD), who lived and worked in Baghdad during Yaḥyā's time, writes in his *Emunoth ve-Deoth* (*The Book of Beliefs and Opinions; Kitāb al-Amānāt wa-l-Iʿtiqādāt*) that the way to respond to the problem of divine foreknowledge is by arguing that the Creator's knowledge of a thing is not a reason for that thing's being, placing him

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[242] Ammonius (136.5-8) nevertheless grants that the gods 'bring about all things in the world' (πάντα τὰ ἐν τῷ κόσμῳ παράγοντας) and that they are the 'causes of the eternal essences' [τῶν μὲν ἀιδίων οὐσιῶν αἰτίους] and the causes of generated things [τῶν δὲ γεννητῶν]. Ammonius thus does not see an incompatibility in holding that divine foreknowledge does not cause its objects to conform to the former, and that the gods are the ultimate causes of eternal essences and generated things.

[243] Craig, *The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*, 59; William Hasker, "The foreknowledge conundrum," *International Journal for Philosophy of Religion* 50 (2001): 99. For more on Origen, see Trigg (*Origen*. London: Routledge, 1998).

[244] One important difference between Boethius and Yaḥyā is that Boethius seems to reject a strategy that first denies that God's knowledge is a cause of its objects but rather holds that its objects are causes for it. Yaḥyā accepts the former (that God's knowledge causes its objects) but he leaves it open as to whether the reverse is true.

[245] For more on this Spanish poet-philosopher-physician, see Kogan ("Judah Halevi," *The Stanford Encyclopedia of Philosophy* [Summer 2020], https://plato.stanford.edu/archives/sum2020/entries/halevi/.

[246] Harry Austryn Wolfson, *The Philosophy of the Kalam*, 662.

in a similar camp as Yaḥyā and Origen, and not in the same camp as Boethius. [247] Saadia, like Yaḥyā, also argues that if God's knowledge were a cause of the being of things [*law kānā 'ilm Allāh bi-l-shay' huwa sabab kawn al-shay'*], then [all] things would need be eternal [*la-kānat al-ashyā' qadīma*, 154.16-17].[248]

Thus this idea does not originate with Yaḥyā, and it is possible that he was aware of other thinkers' use of such a solution, given his background in Christian theology.[249] Nevertheless, as we noted, this solution will not work against the proof as he presents it. We will see below that Yaḥyā does offer a solution that does.

Chapter 4 is dedicated to identifying the errors which may lead one to believe in the correctness of the proof. Yaḥyā thinks this mistake is rooted in interposing [*tadākhul*, *tashābuk*, 72.13] each of the two relata [*muḍāfayn*, 72.13], i.e. God's knowledge [*'ilm*] and the objects of that knowledge [*ma'lūmāt*]. He writes that it is very difficult to distinguish [*'asira al-tamyīz*, 73.6] between the entailments of things [*lawāzim al-umūr*, 72.16] when they [the things] are taken alone [*mujarradat al-dhāt*, 72.16], without adding any description or condition [*bi-ghayr ziyādat ṣifa aw sharīṭa*, ibid], and the entailments of things when they are taken in relation to some description or condition. The entailments of one thing may contradict the other [*tataḍāddu*, 72.19] when they are taken one way (i.e. by themselves) and then taken in the other (i.e. with the addition of some external relata or condition). He writes that his goal [*gharaḍ*, 73.6] in this treatise is concerning foreknowledge, and concerning the differentiation of its entailments [*lawāzim dhātihi,* 73.6] when they are taken on their own [*'alā al-tajrīd*, 73.7] and when they are taken with the addition of descriptions or conditions [*ma'a ziyādat ṣifāt aw sharā'iṭ,* 73.7].

Yaḥyā then dedicates several paragraphs to emphasizing that this is a key point that requires skill and experience [*ḥunka wa-durba*, 73.1] to properly understand. He waxes poetic about the importance of finding truth, and asks for patience and success in his endeavor before entering into the core of his critique. This section reads like a second introduction, as if Yaḥyā

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[247] For more on this Abbasid-era Jewish contemporary of al-Fārābī and Yaḥyā, see Pessin ("Saadya [Saadiah]," *The Stanford Encyclopedia of Philosophy* [Fall 2008], https://plato.stanford.edu/archives/fall2008/entries/saadya/).

[248] Saadia, unlike Yaḥyā, argues that God's knowledge will match the modal status of its object, i.e. God knows the contingent contingently, the possible possibly, etc. (154.18-21).

[249] Craig calls this solution the Origenist one, suggesting that he thinks that Origen came up with it (*The Problem of Divine Foreknowledge and Future Contingents from Aristotle to Suarez*, 89).

were embarking on a second treatise. In a way he is, since the solution put forth here is distinct from the one we read in Chapter 3.

Chapter 4 is the most enigmatic part of the treatise. What does Yaḥyā mean by *lawāzim*? In the Arabic *Categories* (Ḥunayn Ibn Isḥāq translates συμβεβηκότα (concomitant) as *lawāzim*.[250] A concomitant in peripatetic terms is a "necessary accident"; a property which something always has, even though it is possible that it not have it.[251] At 7a36 (*Maqūlāt* 335.15), συμβεβηκότα is translated as '*āriḍa* and *lāḥiqa*, which means simply "accident" (i.e. a non-essential property of a thing). For example, assuming a peripatetic understanding of man, the essence of man is rationality and animality; these essential attributes enter into the definition of man. All men, however, also have the capacity to laugh, but laughter does not enter into the definition of man. Thus the capacity for laughter attaches always to the nature man (since all men have the ability to laugh), although it is not constituent of it. This helps explain why Ḥunayn translated συμβεβηκότα[252] with *lawāzim*, whose root, *l z m*, means to cling or to adhere. It also carries notions of necessity [*luzūm*] and accompaniment. We can thus translate *lawāzim* as "entailments" or "concomitants."

We will posit two possible readings for *lawāzim*, the first is our own and the second is adapted from Ehrig-Eggert.[253] The first reading notes that if we consider the modal status of a thing to be one of its *lawāzim*, i.e. one of its entailments, then we can construct a coherent interpretation of what Yaḥyā could mean: the modal status of one thing can be one way when that thing is taken alone, but it can be another way when it is taken in relation to external factors. If we accept such a reading, then Yaḥyā probably has in mind the Aristotelian distinction between simple and hypothetical necessity, which, as we saw in Chapter 2, plays an important role in al-Fārābī's as well as the late antique commentators' solutions of the problem of divine foreknowledge. Something may be contingent when considered alone, i.e. intrinsically, but necessary when taken in conjunction with an external relation or condition, i.e. extrinsically. Yaḥyā's mention of the skill [*ḥunka wa-durba*] needed to understand this distinction brings to

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[250] *Categories* 7a27; *Maqūlāt*, 335.8
[251] Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn 'Adī*, 76.
[252] He likely translated it via a Syriac intermediary.
[253] Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn 'Adī*, 76-79.

mind Boethius, who, before presenting the distinction between simple and hypothetical necessity in the *Consolatione*, also says that it is a point "which scarcely anyone can approach to who has not made the Divine his special study" [*cui vix aliquis nisi divini speculator accesserit*; Book V, Prose 6].[254] This reading suggests that Yaḥyā follows his predecessors in arguing that God's knowledge does not confer simple necessity to its objects but rather conditional necessity, and this is why God's knowledge is compatible with contingency.

Another possible reading, posited by Ehrig Eggert, is that *lawāzim* means something like "description" or "accident" without any implied connection to the distinction between simple and hypothetical necessity. According to Ehrig-Eggert, Yaḥyā is emphasizing the difference between the descriptions of things when they are taken abstractly versus the descriptions of things when they are taken in relation to something else.[255] Since knowledge is of the nature of relata [*al-ʿilm min ṭabīʿat al-muḍāfāt*, 73.8], the upshot is that that something's descriptions may be one way when that thing is taken alone according to its essence [*mujarradat al-dhāt*, 72.16] and then they may be another way when the thing is considered as an agent or object of knowledge. We will revisit this reading and its advantages below.

After introducing this distinction and discussing its importance, Yaḥyā writes that the proof is based on three false premises. The first of these false premises holds that the ontological state of the known [*ḥāl wujūd al-maʿlūm*, 73.18] must correspond to the state of the knower [*muwāfiqah li-ḥāl al-ʿālim*, 73.18]. Yaḥyā rejects this premise, arguing that while God's state is one of eternity [*al-qidam wa-l-azaliyya*, 74.1], the status of the objects of his knowledge is not. Hence the relation between God [the knower, *al-ʿālim*] and the objects of His knowledge [the *maʿlūmāt*] is not one of identity [*mumāthala*, 74.7]. This is is similar to the move we saw Boethius, Ammonius and Stephanus make in their solutions to the problem of divine foreknowledge in Chapter 2, the latter two attributing it to Iamblichus.[256] The core of the move asserts that the nature of knowledge corresponds to the knower and not to the known.[257] Yaḥyā

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[254] As noted in the previous chapter, Yaḥyā would not have read Boethius, although they did share (most notably) Porphyry and Alexander of Aphrodisias as common sources.

[255] Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn ʿAdī*, 76-80.

[256] Book V, Prose 6 in the case of Boethius, 135.12-137.12 in Ammonius' commentary, and 35.20-39 in Stephanus'.

[257] Al-Fārābī does not make this move, nor does he allude to it in any way. As we noted in Chapter 2, it is not immediately where Iamblichus puts forth this solution which Ammonius and Stephanus attribute to him.

does not go that far, but his assertion that the status of the knower need not correspond to the status of the known (i.e. God can know finite things without Himself being finite) suggests that Yaḥyā was aware of this Iamblichean solution. Yaḥyā could have learned of it through a number of ways. Al-Nadīm's *Fihrist* lists both Stephanus' and Iamblichus' commentaries on *De Interpretatione* IX.[258] Ibn Al-Nadīm also mentions Proclus' *Elements of Theology* [*kitāb al-thālūjiyya*].[259] Yaḥyā could have learned of this solution from any of those sources.[260]

Yaḥyā's use of elements of the Iamblichean solution is a significant discovery. For example, Zimmerman claims that al-Fārābī's lack of mention of the Iamblichean solution suggests that "the rather sophisticated theorem of Iamblichus did not survive the hazards of translation and transmission in intelligible form."[261] Since it is safe to assume that al-Fārābī and Yaḥyā had access to the same texts while studying under their teacher Abū Bishr, our observations suggest that Zimmerman's claim must be reconsidered. Ehrig-Eggert discusses the likely influence of Iamblichus and Proclus on Yaḥyā (directly or via the intermediaries of Stephanus and Ammonius), although he concentrates more on how the latter influences Yaḥyā's view of divine knowledge as a cause of its objects, not Yaḥyā's separation of the status of the knower from the status of the known.[262]

The second premise which Yaḥyā attacks holds that the status of God qua knower [*ḥāl al-ʿālim min ḥaythu huwa ʿālim*, 74.8-9] is one of necessity [*ḥāl ḍarūriyya*, 74.9] insofar as it is fixed and immutable [*thābita ghayr mutaghayyira*, 74.10]. He thinks that this premise is false if the status of the knower is taken absolutely [*ʿalā al-iṭlāq*, 74.10] and without any conditions [*bi-*

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[258] Al-Nadīm, *Fihrist*, 249.3-5

[259] Al-Nadīm, *Fihrist*, 202.16

[260] A move that Ammonius and Boethius view as central, and Stephanus, Yaḥyā, and al-Fārābī omit, is using the idea that the gods exist outside of time to argue that God only knows all things as if they were all in the present. We saw in Chapter 2 that, for Ammonius, the gods know what has occurred, is occurring, and will occur in a singular fashion; they know the "temporal things eternally" [τὰ ἔγχρονα αἰωνίως, 136.16-7]. It is not the case that the gods' knowledge "parallels the flux of things [τῇ ῥύσει τῶν πραγμάτων], ... nor is there for the gods anything which is either past or future, which would be significant of some change, nor that 'was' or 'will be' ... but only 'is' (136.17-21). Boethius in Book V, Prose 6 makes a similar move, arguing at length that divine knowledge is "transcending all movement of time, dwells in the simplicity of its own changeless present, and, embracing the whole infinite sweep of the past and of the future, contemplates all that falls within its simple cognition as if it were now taking place" [*scientia quoque eius omnem temporis supergressa motionem in suae manet simplicitate praesentiae infinitaque praeteriti ac futuri spatia complectens omnia quasi iam gerantur in sua simplici cognitione considerat*].

[261] Zimmerman, *Alfarabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, xciv.

[262] *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn ʿAdī*, 42-43.

ghayr ishtirāṭ, ibid]. He argues that necessity is not a feature of it from every angle [*min jamī' al-jihāt*, 74.11]. This is because the relation of God's knowledge to things which exist sometimes and do not exist sometimes must change as a function of the thing's ontological status.[263] When a thing does not exist, God must know it as not existing. But when that thing exists, God will know it as existing. Thus the modal status of the knower qua knower is not one of complete necessity, and immutability. Yaḥyā explains that God's knowledge of a thing when it exists is numerically [*b-il-'adad*, 74.22] distinct than the knowledge of that thing when it does not exist. God's knowledge is not immutable in the absolute sense of the term; His knowledge changes as a function of the changes in the ontological status of things that admit of change, i.e. contingent things. We do not find a parallel to this idea in any of the other authors that we have examined. To the contrary, we saw that the core aspect of the Boethian solution was the timelessness of divine knowledge: it does not change through time nor does it partake in temporality in any way. God sees all that was and that all is and all that will be "by means of a single flash of intuition" [*uno ictu mentis*, Book V, Prose 4]. We also saw that Ammonius holds that the divine knows generable things in an ungenerable way, and temporal things in an eternal way; it is impossible that the gods' knowledge "parallel the flux of things" (136.17-23). Although from our perspective it seems that "Socrates is going to the market" changes from false to true at the moment when Socrates goes to the market, for Boethius and Ammonius the divine does not perceive Socrates in this way. God sees Socrates' past, present, and future states all at once. Yaḥyā seems to be taking an altogether different approach; God's knowledge changes in accordance with the changes in its objects. When Socrates exists, God knows him as existing. When Socrates does not exist, God knows him as not existing.

Accepting Ehrig-Eggert's reading of *lawāzim* as descriptions or accidents enables us to make sense of this point. Some might object that God's shift from knowing Zayd as non-existent before Zayd's birth to knowing Zayd as existent after his birth constitutes a change in the descriptions or accidents of the divine essence, which is impossible as God is eternal and

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[263] This assumes that there are things which change in their ontological status, i.e. things that come to be after having not been, or stop being after having been. Yaḥyā will argue that the existence of such things is self-evident in Chapter 6 (79.18-20).

immutable. This is because God must change from a God who knows Zayd as not existing to a God who knows Zayd as existing. But Yaḥyā, using the idea that the *lawāzim* of a thing can differ depending on whether the thing is taken alone or in relation to something else, could respond that a change in God's knowledge does not constitute a change in the descriptions of His essence when it (the essence) is taken absolutely. It constitutes rather a change in the descriptions of His essence when it is taken in relation to something else, namely when it is taken as a knower of some other thing. God qua knower changes as the objects of knowledge change, but God himself (God qua god, i.e. *'alā al-tajrīd*) remains the same. This answer relies on two ideas. First, it relies on the claim that the descriptions of things differ according to whether things are viewed abstractly or in relation to something else. Secondly, it requires that knowledge be construed as a relation between two other things, and not as something which is objectively (i.e. non-relatively) part of something's essence.

As Ehrig-Eggert notes, both of these ideas likely stem from Chapter 7 of Aristotle's *Categories*, starting at 6a36 (87.6 in the Arabic *Maqūlāt*).[264] Aristotle discusses here the category of relatives.[265] Aristotle says that something is a relative if in itself it is always spoken of in reference to something else; he offers the examples of "double" and "greater." Something is never said to be double *simpliciter*; it is always double of something. Presumably, then, all parts of wholes are relatives; something cannot be a quarter; it must be a quarter of something else.[266] Likewise with "greater;" in order for something to be greater, it must be greater than something else. Aristotle writes that state, condition, perception, knowledge, and position [ἕξις, διάθεσις, αἴσθησις, ἐπιστήμη, θέσις; *al-malaka, al-ḥāl, al-ḥiss, al-ʿilm, al-waḍ*ʿ, 6b2-3; *Maqūlāt* 48.11-2] are all relatives. This is because "each of these is called what it is — and not something different — of something else [πάντα γὰρ τὰ εἰρημένα τοῦθ' ὅπερ ἐστὶν ἑτέρων λέγεται καὶ οὐκ ἄλλο τι; *fa-inna jamīʿ mā dhakara min dhālika fa-māhiyyatuhu innamā tuqālu bi-l-qiyās ilā ghayrihi lā ghayr,* 6b3-4; *Maqūlāt* 38.13-4]. Thus for Aristotle a state is said as a state of something else, perception as a perception of something else, knowledge as a knowledge of something else, and

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[264] Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn ʿAdī*, 82.
[265] Πρός τι in Greek; literally "something towards something else." The Arabic translation uses *muḍāf*.
[266] Studtmann, Paul, "Aristotle's Categories," *The Stanford Encyclopedia of Philosophy* (Fall 2018), <https://plato.stanford.edu/archives/fall2018/entries/aristotle-categories/.

so on. When Yaḥyā writes that "knowledge is of the nature of relata" [*al-ʿilm min ṭabīʿat al-muḍāfāt*, 73.8], he likely has *Categories* 7 in mind.

Later on in *Categories* 7, Aristotle writes that it is a problem [ἀπορίαν; *mawḍiʿ shakk*, 8a13; *Maqūlāt* 52.24] whether substances [οὐσία; *jawāhir*, 8a13; *Maqūlāt* 52.24-5] are spoken of as relatives.[267] Although matters are more nuanced in the case of secondary substances, Aristotle believes that primary substances are never relatives. [268] A man cannot be another individual's man in the way that a number can be the double (or the half) of another number.[269] These two notions, that knowledge is a relative and that primary substances are never relatives, enable Yaḥyā to divorce God the individual (i.e. the primary substance) from God the knower (a relatum related to another relatum). Thus God qua knower can change without God as substance (i.e. God qua God) changing.

Yaḥyā's move to allow God's knowledge to change in time by separating God qua knower from God qua God is Yaḥyā's innovative contribution to the problem of divine foreknowledge, as Ehrig-Eggert affirms.[270] It is not a move we see in Aristotle or any of the late-antique commentators whom we examined. To the contrary, Ammonius and especially Boethius make the atemporal and immutable nature of divine knowledge cornerstones of their responses to the problem. Al-Fārābī presents an answer but does not endorse it. Avicenna will later hesitate to attribute to God knowledge of particular things out of the concern that it would introduce change and multiplicity in the Divine.[271]

Interestingly, Yaḥyā seems to be in agreement with an idea that Proclus attributes to Porphyry in his commentary on the *Timaeus* that "knowledge is characterized by the natures of

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[267] Substance is the first of the ten categories. It is ontologically prior in that all the other categories are either said-of or present-in substance (2b4). Thus if there were no substance, then none of the other nine categories could exist. Substance divides into two: primary and secondary. Primary substances are individual things, like Zayd or Socrates. Secondary beings are the species and genera of primary substances, e.g. man in the case of Zayd or Socrates and animal in the case of Seabiscuit the racehorse.

[268] Aristotle says that secondary substances, in general, are not relatives. But there are exceptions. For example, it seems that body parts are relatives; i.e. a hand is always called someone's hand or a head is always called someone's head.

[269] 8a15-18

[270] Ehrig-Eggert, *Die Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn ʿAdī*, 82.

[271] Michael Marmura, "Some aspects of Avicenna's theory of God's knowledge of particulars," *Journal of the American Oriental Society* 82, no. 3 (1962): 299-312.

thing known, or that what is not stable is not stable with the Gods, as the philosopher Porphyry says" [ταῖς τῶν γνωστῶν φύσεσιν αἱ γνώςεις χαρακτηρίζονται, μηδ' ὅτι τὸ μὴ ἀραρός οὐκ ἀραρός ἐςτι παρα θεοῖς, ὥς φησιν ὁ φιλόςοφος Πορφύριος ...].[272] The notion here, which is in opposition to what Proclus believes and what Stephanus and Ammonius attribute to Iamblichus, is that God's knowledge does match the objects of knowledge in their "stability" i.e. in their not being fixed [ἀραρος].[273] This is what Yaḥyā asserts when he states that God's knowledge changes in accordance with the change of its objects. Where exactly Porphyry espouses this view, and whether Yaḥyā could have known about it, remains unclear. It could have been in one of Porphyry's commentaries on *De Interpretatione* 9, or in Porphyry's comments on Aristotle's use of knowledge as an example of "relative," in his lost long commentary on the *Categories*, the *Ad Gedalium*. Yaḥyā's rejection of the first premise very likely pulls from Iamblichus, Proclus, Stephanus and Ammonius in his claim that an eternal God can know non-eternal things, while his rejection of the second premise may be inspired by Porphyry who (according to Proclus) maintained that divine knowledge does reflect the stability of its objects.[274]

Yaḥyā's move enables him to avoid the critique we made concerning Ammonius' and Boethius' solutions in Chapter 2. The fact that God is eternal and outside of time means that God is changeless, since change requires potentiality and temporality, and neither of these can exist in the divine essence. This means that God's knowledge is both infallible (i.e. God cannot be deceived; if God knows X, then X must be the case) and irrevocable (if God knows X, then God cannot come to know not X; God's knowledge is immutable). It follows from this that there is nothing Socrates could do today to affect the modal status of his walking tomorrow, since God knows in an irrevocable and infallible way all things, including what is (from our human perspective) in the future.

Yaḥyā's strategy is to allow God's knowledge to change in time. Thus there are things Socrates could do today to affect the status of his walking tomorrow; this is because God's knowledge changes in accordance with the status of its objects. Before Socrates is born, God

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[272] Proclus, *Commentary on Plato's Timaeus*, vol 1, trans. Thomas Taylor (London: Valpy, 1820), ed. Ernst Diehl. (Amsterdam: Hakkert, 1965), I.352

[273] Lexically ἀραρός is the perfect active neuter singular participle of ἀραρίσκω, meaning to "join together" or to "fit"; hence the notion of 'stable.'

[274] al-Nadīm mentions Porphyry's commentary as extant (*Fihrist*, 249.4).

knows him as non-existent. Once he is born, God's knowledge changes from knowing him as non-existent to knowing him as existent. Yaḥyā justifies such a position by pulling from *Categories* 7 where Aristotle describes knowledge as a relative, i.e. something which is always said in relation to something else and which is never a primary substance. Since knowledge is a relative, this innovative move enables Yaḥyā to divorce God qua God from God as knower, and argue that change in the latter need not constitute change in the former.

Yaḥyā's solution does raise certain concerns, however. First, if God's knowledge is not the cause of its objects (as he argued in Chapter 3), and if God's knowledge can change in time, then it would seem that our decisions can affect God's knowledge. If God's knowledge of Socrates birth did not cause Socrates birth, and if God's knowledge of Socrates' birth changes according to the status of Socrates' birth, then this seems to leave open the possibility that God's knowledge is determined by its changeable objects. It is counterintuitive that the actions and happenings of a non-eternal finite being could influence the status of an eternal immutable being who is (presumably) the ultimate cause of the existence of all things. Yaḥyā could respond by claiming that the objection confuses God the knower with God qua God. Our objection implies only change in God qua knower, which does not imply not change in God Himself. This brings us to a second objection; is God qua knower [*min ḥaythu huwa ʿālim*] really distinct from God qua God? At least from an Islamic theological perspective, divorcing knowledge from the divine essence would be an uphill battle. This is the case if one were to accept a Muʿtazalite theology in which the divine attributes are not held to be separate from the divine essence.[275] The Quran is clear that one of the key attributes of God is that He is the all-knower [*al-ʿālim*] and that 'He does not miss an atom's weight' [*lā yaʿzubu ʿanhu mithqāl dharra*; 34:3]. At least on a Muʿtazalite account, then, a change in divine knowledge could entail a change in God. Matters might be different for an Ashʿarite who affirms the existence of positive divine attributes (like knowledge) which are distinct from and super-added to the divine essence.[276] But even for an Ashʿarite, God's knowledge is eternal, which could imply that it is changeless. Furthermore, a

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[275] For more on Muʿtazalite theology and its view on divine attributes see Robert Wisnovsky, "One aspect of the Avicennian turn in Sunnī theology," *Arabic Sciences and Philosophy* 14 (2004): 65-100.

[276] For an overview of the Ashʿari *kalām* and its views on divine attributes, see Allard (*Le Problème des attributs divins dans la doctrine d'al-Ašʿarī et de ses premiers grands disciples*, tome 28 [Beirut: Imprimerie Catholique, 1965]) or Gimaret (*la Doctrine d'al-Ashʿarī*, Paris: Cerf, 1990).

change in an attribute of God, even if that attribute is independent of the divine essence proper, could still constitute a change in God.[277] In any case, Yaḥyā does not describe in this treatise his views on the relation of God to His attributes in a manner that enables us to properly evaluate the compatibility of his views on divine knowledge with this theological beliefs overall.

A third premise which Yaḥyā attacks targets the claim that God's knowledge need not change even if the object of knowledge changes. He argues that the proponents of the proof must accept the falsity of this premise based upon what they themselves have argued, namely, that it is not the case that God can not know something and then come to know it. Yaḥyā reiterates that the quiddity [*māhiyya*, 75.7] of Zayd when he exists is not the same as his quiddity when he does not exist. This means that when Zayd goes from non-existence to existence, then God's knowledge, if it is absolutely immutable, will not reflect this change. Here, it is not the case that the state of God's knowledge corresponds to the state of the objects of knowledge, which is something the proponents of the proof themselves grant. This reveals an internal inconsistency in the proof: one cannot simultaneously believe that God is immutable and that the state of His knowledge corresponds to the state of the objects of His knowledge.[278] This premise is related to the previous one. Since objects do come in and out of existence, God's knowledge is not absolutely immutable. When Zayd goes from existence to non-existence, or from non-existence to existence, God's knowledge of Zayd must reflect this change. This move to deny the absolute necessity (*ḍarūriyya*) of God's knowledge, where the necessity is understood as linked to the fact that it is fixed and immutable (*thābita ghayr mutaghayyira*), is unique to Yaḥyā; we do not find it in any of the authors we have so far examined.

This concludes our discussion of Chapter 4. We highlight three primary results of our analysis. First, we posited two readings for Yaḥyā's idea that the *lawāzim* of a thing may change as a function of whether the thing is considered in isolation or in relation to something else. If we

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[277] This would be the case if one held that the divine attributes, although conceptually separable from God Himself, still constitute non-disposable features of Him, i.e. God is always knowing, even though the knowing is not part of His essence properly speaking.

[278] This critique only works if there are things whose existential status changes. If the existential status of nothing ever changes, then God's knowledge can indeed be absolutely immutable and infallible without issue. Yaḥyā considers it self-evident that things do come in and out of existence, i.e. things which change in their existential state.

read *lawāzim* as connoting the modal status of a thing, then we can consider Yaḥyā as setting himself up to differentiate between simple and hypothetical necessity and to argue, like the other thinkers which we have examined (Boethius, Ammonius, and Stephanus) that divine knowledge imparts hypothetical, and not simple, necessity to its objects. If, on the other hand, we understand *lawāzim* in accordance with Ehrig-Eggert as referring primarily to the accidents or attributes of things, then we can read Yaḥyā as pulling from *Categories* 7 in order to cleave God qua God away from God qua knower, and to explain why change in the former does not imply change in the former. We argued that this move, to effectively deny the immutability of God's knowledge, using the idea that knowledge is a relative, is an original and innovative solution to the problem of divine foreknowledge. It may, however, have its origins in Porphyry, who, according to Proclus, believed that the instability of the objects of divine knowledge is present in their knower. We discussed some of this solution's shortcomings, namely, that Yaḥyā's solutions seems to place God's knowledge in a causal posteriority to its objects, and that it is unclear whether it is ultimately acceptable that God qua God be sufficiently distinguishable from God qua knower such that change in one need not entail change in the other.

Second, we noted that Yaḥyā's claim that the ontological status (*ḥāl wujūd*) of the knower need not correspond to the modal status of the known contains elements of the solution that Ammonius and Stephanus attribute to Iamblichus, who purportedly explained how God may know things which are not eternal despite the fact that He is. We noted the significance of this discovery since thus far modern scholars have overlooked or outright denied Iamblichus' influence on Yaḥyā and his intellectual circles.

Finally, we noted the originality of Yaḥyā's claim that God's knowledge changes in accordance with changes in its objects. Stephanus and al-Fārābī do not discuss the temporality or atemporality of God in their treatments of the problem of divine foreknowledge. Boethius centralizes the idea that God is entirely external to time and thus His knowledge encompasses all things, present, past, and future, at once. Ammonius also writes that God's knowledge does not have in it the flux [ῥύσις] of things. If we accept Ehrig-Eggert's reading, then Yaḥyā is likely pulling from *Categories* 7 to make this move. Knowledge is a relative, and relatives are never primary substances; thus God qua knower (which is a relative) is not identical to God qua God

(which is a substance), and God qua knower may change without entailing change in God qua God. We suggested that Porphyry might have been a source for this notion.

Chapter 5 marks the end of the critical section of the text. It presents four ways to guard [*wujūh iḥrās*, 76.5] against the errors made when discussing the reality of the contingent. This chapter is focused on providing pointers [*tanbīḥāt*] to someone who is defending the reality of the contingent before an interlocutor. The first way is not to accept that all the ontological states of the knower necessarily correspond to all the existential states of the known.[279] Yaḥyā does not elaborate on this way here since it was already treated in the previous chapter.

This is unsurprising as a pointer. As we saw above, it is an important move in Yaḥyā's critique of the proof, and has roots in the Iamblichean distinction between the statuses of the knower and the known. God is eternal, yet the objects of His knowledge are not.

A second way to avoid error is not to believe that Zayd's walking tomorrow is necessarily existent or non-existent, when Zayd's walking is abstracted and taken on its own [*'inda tajrīdihā*, 76.12] from all description [*ṣifa*, 76.14]. This is because Zayd's walking itself [*dhāt mashy Zayd*, 76.13], if it is not described by anything at all [*idhā lam tūṣaf bi-shay' al-batta*, 76.13], is possible of both existence and non-existence [*mumkina al-wujūd wa-l-'adam*, 76.12]. If a description is added to it, for example that Zayd is tied to a post [*mūthaq bi-sāriyya*, 76.14], then his walking becomes impossible of existence [*mumtani' al-wujūd*, 76.15] and necessary of non-existence [*ḍarūrī al-'adam*, 76.15]. On the other hand, if a different description is added, for example that he is free of any obstacles [*'awā'iq*, 76.16] which would prevent his walking and that he is desirous of walking, then his walking becomes necessary of existence and impossible of non-existence [*ḍarūrī al-wujūd mumtani' al-'adam*, 76.16].

This second way helps in understanding Yaḥyā's points in Chapter 4 surrounding how the *lawāzim* of a thing may differ as a function of whether the thing is taken on its own, or in relation to something else. Yaḥyā uses similar language here as he does in the previous chapter. In Chapter 4, he wrote that "The delineation of the entailments of things when [the things] are taken on their own, abstracted, without the addition of any description or condition or relation to

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[279] i.e. if we are defending the reality of the contingent before someone who is attempting to cast doubt regarding it, then we should not do not concede, or we should not allow them to corner us into granting, that the ontological states of the known must in all ways correspond to those of the knower.

something [else] is very difficult," [*'asara al-tamyīz bayna al-umūr idhā ukhidhat mujarradat al-dhāt bi-ghayr ziyādat ṣifa aw sharīṭa aw iḍāfa ilā shay'*, 76.16-18]. In Chapter 5, he writes that "not every situation implies a situation of existence or non-existence for the essence of Zayd's walking tomorrow, when it [the walking itself] is taken on its own and abstracted from every description" [*laysa kull ḥāl yalzumu dhāt mashy Zayd ghad min aḥwāl al-wujūd wa-l-'adam 'inda tajrīdihā min kull ṣifa*, 76.11-13]. Yaḥyā in Chapter 4 mentions description [*ṣifa*] as one of the things that may change the *lawāzim* of a thing, i.e. the *lawāzim* of a thing may be one way when that thing is taken alone and then another way when the thing is considered in conjunction with a *ṣifa*. This suggests that the pointer in Chapter 5 is a particular case of the general point Yaḥyā made in Chapter 4. Yaḥyā's use of a derivative of the root *j r d* in both chapters to describe the first way that things may be considered further hints at a connection between these two sections of the text.[280] The particular case in Chapter 5 is Zayd's walking tomorrow [*mashy Zayd fī ghad*]. Applying the general rule in Chapter 4 to the case put forth in Chapter 5, the idea would be that the *lawāzim* of Zayd's walking tomorrow would be one way when Zayd's walking is taken abstractedly in an of itself, abstracted from all descriptions [*'alā al-tajrīd* or *mujarradat al-dhāt*], and another when it is taken with the addition of a description [*ṣifa*]. If we adopt the reading that we posited, that the modal status of a thing is one of its *lawāzim*, then our reading of this section of Chapter 4 aligns well with this part of Chapter 5, since Yaḥyā writes in the latter that the modal status of Zayd's walking tomorrow depends on the description with which it is considered. But if it is considered in itself abstracted from external descriptions, it is contingent, i.e. Zayd may or not walk. If it is taken in conjunction with some other description, such as his being tied to a post, then Zayd's walking tomorrow is no longer contingent but impossible (i.e. necessary of non-existence). Likewise, if it is taken in conjunction with a description like "he is free of obligation and desirous of walking," then his walking tomorrow becomes necessary (of existence). Accepting the *lawāzim* of a thing as including its modal status thus yields a coherent reading of these two sections in Chapters 4 and 5: the section from Chapter 5 is a particular example of the general rule presented in Chapter 4.

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[280] *mujarradat al-dhāt* in Chapter 4 and *'alā al-tajrīd* in Chapter 5. Lexically the root *j r d* means to peel or to strip.

This would mean that both of these sections refer to a common idea, namely the difference between simple and hypothetical necessity that we have seen all of our authors utilize in their answers to the problem of divine foreknowledge and which originally stems (most clearly) from V.5 in Aristotle's *Metaphysics*. This presumably means that Yaḥyā, like his contemporary al-Fārābī and their late-antique predecessors, believed that the truth or falseness of propositions about the future was necessitated by virtue of God's knowledge of them, but that their necessity was not intrinsic to them. Thus, from God's knowledge that Socrates will walk to the market, it follows that Socrates walk to the market tomorrow (by the correspondence theory of truth); but, there would be no logical contradiction if Socrates were to stay home tomorrow, since Socrates' walking is in itself contingent and its necessity is conditional upon God's knowledge of its being a certain way.

What if we accept Ehrig-Eggert's reading of the *lawāzim* of a thing as referring to its descriptions or accidents? This would mean that in Chapter 4 Yaḥyā does not have the simple/hypothetical distinction in mind. Rather, under this reading Yaḥyā aims in Chapter 4 to split God qua God from God qua knower, since the descriptions (*lawāzim*) of a thing differ according to whether that thing is taken abstractly [*ālā al-tajrīd*] or in conjunction with a description, relation, or condition. Since, as Aristotle writes in *Categories* 7, knowledge falls under "relative," God's knowledge can change without entailing change in God's essence. Chapter 5 then aims at a different idea, namely the simple/hypothetical necessity distinction; Yaḥyā is advising the defender of the contingent to keep in mind that a thing's ontological status may differ as a function of how the thing is considered. This will be helpful if someone attempts to argue that if God knows X, then necessarily X. Recall that Yaḥyā in Chapter 3 argued that divine knowledge is not a cause that necessitates the existence or non-existence of its objects. In Chapter 4 he argued that God's knowledge changes in accordance with the changes of its objects; when Zayd goes to the market God's knowledge of him changes from knowing him as not going to the market to knowing him as going to the market. An objector may argue that these points are irrelevant since Yaḥyā grants that God's knowledge is infallible (God must know things as they are, *'alā mā hiya 'alayh*) and all encompassing. This means that if God knows Zayd as walking to the market, then it is necessary that Zayd walk to the market. Yaḥyā's advice

to the defender of the contingent is to grant that God's knowledge of Zayd's trip to the market necessitates his going to the market tomorrow. The necessity of Zayd's future market trip is not intrinsic to it, however; it is rather conditional upon God's knowledge of the trip. Such an exposition brings to mind Boethius, who (as we saw in Chapter 2) also introduces the hypothetical/simple necessity split as an answer to an objection:[281]

> And if to this thou sayest that what God sees to be about to come to pass cannot fail to come to pass *[Hic si dicas quod eventurum deus videt id non evenire non posse]*, and that what cannot fail to come to pass happens of necessity [*quod autem non potest non evenire id ex necessitate contingere*], and wilt tie me down to this word necessity [*meque ad hoc nomen necessitatis adstringas*], I will acknowledge that thou affirmest a most solid truth, but one which scarcely anyone can approach to who has not made the Divine his special study [*fatebor rem quidem solidissimae veritatis sed cui vix aliquis nisi divini speculator accesserit*]. For my answer would be that the same future event is necessary from the standpoint of Divine knowledge, but when considered in its own nature it seems absolutely free and unfettered *[Respondebo namque idem futurum, cum ad divinam notionem refertur, necessarium, cum vero in sua natura perpenditur, liberum prorsus atque absolutum videri]*.

Ammonius too introduces the idea as a piece of dialectical advice, as if to pre-emptively prepare his reader for a possible objection:[282]

> One must not think that the things we are calling 'contingent' will have a necessary outcome because of the fact that they are known in a definite manner by the gods … [οὐ χρὴ νομίζειν ὅτι ἀναγκαίαν ἕξει τὴν ἔκβασιν ἃ λέγομεν ἐνδεχόμενα διὰ τὸ ὑπὸ θεῶν γινώσκεσθαι ὡρισμένος …] the same thing is contingent in its own nature [καὶ ἔστι τὸ αὐτὸ τῇ μὲν φύσει τῇ ἑαυτοῦ ἐνδεχόμενον], but in the gods knowledge it is no longer indefinite, but definite [τῇ δὲ γνώσει τῶν θεῶν οὐκέτι ἀόριστον ἀλλ' ὡρισμένον].

Regardless of which reading we adopt, *lawāzim* remains a crucial term. The most obvious way to harmonize our reading with Ehrig-Eggert's would be to grant that by *lawāzim* Yaḥyā means descriptions, and that the ontological status of a thing is one of its descriptions. In this way we can accept that these sections of Chapters 4 and 5 share the idea that something may differ in its descriptions according to how it is considered, but that the two sections focus on different instances of this notion. In Chapter 4, Yaḥyā focuses on the descriptions of God, noting that when He is taken as an agent of knowledge [*min ḥaythu huwa 'ālim*] his descriptions may be one way, but when He is taken in His essence they may be another. This allows Yaḥyā to permit change in divine knowledge without allowing for change in the divine essence. In the excerpt from Chapter 5, he focuses on future contingent events, like Zayd's walking tomorrow, noting that its modal status may be one way when the walking is considered abstractly and another

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[281] Book V, Prose 6.
[282] 136.24-136.33

when it is taken in relation to something else. This is offered as a response that one may make to an objector who notes that regardless of Yaḥyā's arguments against the proof, the fact that God is omniscient and infallible is sufficient on its own to render "contingent" empty of meaning.

The fact that Yaḥyā includes in his response a version of the simple/hypothetical necessary split is significant for several reasons. First, it further demonstrates the continuity between Yaḥyā and his late-antique predecessors. As we noted in Chapter 2, Ammonius, Boethius, and Stephanus make use of this Aristotelian notion to show why the necessity conferred by God's knowledge to its objects is not one that is incompatible with their inherently contingent nature. Second, it allows Yaḥyā to support a non-standard reading of how truth values are distributed between the members of a contradictory pair of propositions about the future. Yaḥyā does not indicate clearly his view on the truth values of future contingent propositions in his discussion of divine foreknowledge. Nevertheless, we do know that he believes that God has knowledge of all that is and all that will be [*al-bāri' 'ālim bi-jamī' al-mawjūdāt wa-l-kā'ināt*, 66.8-9]. If Yaḥyā accepted a solution according to the standard interpretation, he would hesitate to write that God knows future things: future things would not be knowable since their truth values would not yet be distributed, and hence there would be nothing to know. He could accept that God has disjunctive knowledge of future contingents, i.e. knowledge that either Zayd will go to the market or he will not go, but not knowledge of one rather than the other. But the fact that Yaḥyā does not differentiate between God's knowledge of existent things [*al-mawjūdāt*] and His knowledge of future things [*kā'ināt*] suggests that His knowledge of the former is like His knowledge of the latter: it is not disjunctive knowledge that either X or –X; it is rather definite in that He knows which member of the contradictory pair is false and which is true. Since divine foreknowledge is compatible with contingency, Yaḥyā does not need to deny the principle of bivalence for future contingent propositions. God can know that "Socrates will go to the market tomorrow" is true without destroying the contingency of the event.

Third, it offers Yaḥyā a solution to the problem of divine foreknowledge formulated in terms of logical determinism. As we noted above, Yaḥyā presents the proof from divine foreknowledge in Chapter 2 as one that purports to show how divine knowledge logically determines the status of its objects (via the immutability and infallibility of God's knowledge), but his refutation of the proof in Chapter 3 refutes the claim that God's knowledge causally

determines future events. Yaḥyā's appeal in Chapter 5 to the distinction between simple and hypothetical necessity provides him a way out of the logical determinism version of the problem: the necessity of future events follows from God's knowledge of them, but this necessity is only conditional and not simple (i.e. it is not intrinsic to the object of knowledge in question). Thus God's necessitating knowledge does not destroy the intrinsic contingency of its objects. This, joined with the fact that God's knowledge can change, and with the fact that God can be eternal while the objects of His knowledge are not, provides Yaḥyā with an innovative solution to the problem of divine foreknowledge in its logical determinism version.

Fourthly, Yaḥyā's inclusion of a simple/hypothetical necessity split enables us to nuance our understanding of al-Fārābī. As we saw al-Fārābī's solution to the problem of divine foreknowledge utilized the difference between simple and hypothetical necessity. Certain scholars, like Wisnovsky and Adamson, hold that al-Fārābī's solution, despite his dismissiveness towards it, anticipates certain aspects of Avicenna's metaphysics, according to which God is the only intrinsically (simply) necessary being [*wājib al-wujūd bi-nafsihi*], and all other beings are contingent insofar as their contingency is hypothetical, i.e. it is through another [*wājib al-wujūd bi-ghayrihi*].[283] Al-Fārābī is celebrated for having seen the modal implications of the simple/hypothetical split.

In what is called the classical or statistical model of contingency, the necessary is understood extensionally as that which always exists, the possible as that which sometimes exists, and the impossible as that which never exists.[284] But if contingency and necessity are not defined through extensional, but they are instead considered as features of the thing itself, a world of potential solutions opens up. Namely, al-Fārābī realizes that such a non-statistical

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[283] Wisnovsky, *Avicenna's Metaphysics in Context,* 222-3; Adamson, "The Arabic Sea Battle: al-Fārābī on the Problem of Future Contingents," 182-183.

[284] Such an extensional temporal account of necessity, contingency, and impossibility was common in antiquity; its elements can be found in Aristotelian, Stoic as well as Platonic philosophy (Ehrig-Eggert, *Abhandlung über den Nachweis der Natur des Möglichen von Yaḥyā ibn 'Adī*, 90; Simo Knuutila, *Modalities in Medieval Philosophy* (London, New York: Routledge, 1993), 2-3; Simo Knuutila, "Medieval theories of modality." It may also be found in Late Antiquity; for example, Ammonius discusses it in his commentary on *De Interpretatione* (151.9-152.11; 154.35-155.1). Some scholars read Boethius as employing such a 'statistical' conception of modality, although others disagree (Knuutila, *Modalities in Medieval Philosophy*, 45-62; Jonathan Evans, "Boethius on modality and future contingents." *American Catholic Philosophical Quarterly* 78, no. 2 (2004): 247–71. https://doi.org/10.5840/acpq200478214).

modal model will allow for "something which does not exist and will never exist the possibility of existing to have the possibility to exist" [*qad yumkinu an yakūna shay' lam yazil wa-lā yazālu ghayr mawjūd wa-yumkinu an yakūna mawjūd*, 100.5-6]. Likewise it will allow for something which always exists to have the possibility to not exist. This is because Zayd's walking is contingent by virtue of itself, regardless of the statistics of its extra-mental existence. Yaḥyā does not go this far. He does, however, conceptualize the idea of something that is contingent in itself but which is rendered necessary through another. That Yaḥyā shows signs of considering contingency as something essential and not statistical suggests that he, like al-Fārābī and later on Avicenna, is tending towards a metaphysics which departs from the statistical model of modality.

Finally, Wisnovsky notes that al-Fārābī's employment of what is called two-sided possibility also anticipates Avicenna's metaphysics.[285] In one-sided possibility, the opposite of possibility is impossibility. In two-sided possibility is opposed to necessity as well as to impossibility. The possible (i.e. the contingent), according to two-sided possibility, like in one-sided possibility, is that which occurs sometimes and does not occur other times. The necessary, however, is not only what always occurs (i.e. the necessary of existence, but also what never occurs (i.e. the necessary of non-existence).[286] Hence as opposed to impossibility vs. necessity, the basic modal distinction can be reconfigured as one between contingency (of existence and non-existence) vs. necessity (of existence and non-existence). As Wisnovsky notes, this shift is important in facilitating and pre-configuring Avicenna's later fundamental metaphysical division of beings into those which are necessary through themselves [*wājib al-wujūd bi-nafsihi*] and those which are necessary through another [*wājib al-wujūd bi-ghayrihi*]. Yaḥyā also conceives necessity as the opposite of contingency. Zayd's walking, abstracted from all description, is contingent, i.e. possible of existence and non-existence. When descriptions are added, it may become necessary, i.e. necessary of existence or non-existence. We will see below in Yaḥyā's sixth chapter an explicit definition of contingency in terms of two-sided possibility. Thus Yaḥyā,

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[285] Wisnovsky, *Aspects of Avicenna,* 219-220.

[286] Aristotle oscillates between one-sided and two-sided possibility in *De Interpretatione*; the first and third modal truth tables at 22a24-31 will only work if possibility is taken as two-sided, while the second and fourth truth tables only work under one-sided possibility. Aristotle's eventual solution forces him to privilege one-sided possibility (Wisnovsky, *Aspects of Avicenna*, 215; John Ackrill (comm./trans.), *Categories and De Interpretatione = Κατηγορίαι* and *Περὶ Ἑρμηνείας* [Oxford: Oxford University Press, 1963], 61). See Hintikka (*Time and Necessity*, 27-31) for more on Aristotle's conception of possibility.

much like al-Fārābī, configures necessity, not impossibility, as the opposite of possibility, a move which facilitates and anticipates Avicenna's later metaphysical divisions.

A third way to avoid error is to be reminded of the link between "being known as existing" and "existing." It is equivalent to say "things whose existence and non-existence is known according to how the things are" [*al-umūr al-maʿlūma ʿalā mā hiya ʿalayh min al-wujūd wa-l-ʿadam,* 77.1-2] and "the existent things and the non-existent things" [*al-umūr al-mawjūda wa-l-umūr al-maʿdūma*, 77.2-3]. Hence to say that it is known to exist is the same to say that it exists. Likewise with non-existence; saying that something is known not not exist is the same as saying that it does not exist. Things, when they exist, cannot not exist. Likewise things, when they do not exist, cannot exist. Thus there is no contingency in what is known to exist when it exists (i.e. that which exists) and that which is known to not exist when it not does not exist (i.e. that which does not exist).

This pointer aims at two ideas. First, to exist and to be known to exist are equivalent; one implies the other. If God knows Socrates as existing, then it follows that Socrates exists; if Socrates exists, then this means that Socrates is known as existing. This is because, at least in the case of God, He knows all things and His knowledge is infallible.[287] The second pointer is that there is no contingency in present matters. Things, while they happen, happen necessarily.[288] When Socrates walks, it is necessary that he walks. It is also necessary that God know Socrates as walking. Likewise when Socrates does not walk, it is necessary that he does not walk and it is necessary that God know him as not walking.[289] Yaḥyā writes that it follows from this that there is no contingency in present matters. This anticipates how he will define contingency [*imkān*] in Chapter 6. Contingent things are things for which both existence [*wujūd*] and non-existence [*ʿadam*] are possible [*mumkin*]. Since it is not possible for Zayd not to be travelling while he is travelling (since things, while they happen, happen necessarily), non-existence is not possible for it, and it cannot be contingent (while it is occurring). Since the same can be said for all

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[287] i.e. it is not mere belief.

[288] Aristotle opens *De Interpretatione* IX with the idea that that propositions about past and present events are necessarily true (18a28).

[289] This necessity is presumably hypothetical because as we saw in pointer 2, the essence of Zayd's walking when abstracted from all descriptions is one of contingency. Thus Zayd's walking is necessarily existent on the conditional that God know him as walking; likewise his walking is necessary of non-existence.

propositions in the present (that their existence or non-existence is necessary to them), it follows that there is no contingency in present matters; contingency applies solely to the future.

The fourth way advises defenders of the possible to note to those who accept that God's foreknowledge of Zayd's walking renders his walking necessary, that they are including in God's knowledge a very large number of facts [*qad ajmala bi-lafẓat al-'ilm 'ulūm kathīra b-il-'adad*, 77.12-13] . This is because Zayd's accidents are uncountably many [*a'rāḍ Zayd … kathīra lā yumkinunā iḥṣā'uhā*, 77.13-5]; they may even be infinite [*bal in qulnā innahā tukādu an takūna ghayr mutanāhiya lam yab'ud al-ḥaqq*, 77.15-6]. If they attempt to specify [*wa in khaṣṣaṣū*, 77.16] and argue that they are referring to some particular piece of knowledge, such as Zayd's walking tomorrow, then it may be replied that the knowledge of Zayd's walking or not walking tomorrow still includes many facts. This is because, for example, the knowledge of Zayd's walking tomorrow will be understood differently if "tomorrow" is understood as a time for the walking, than if "tomorrow" is understood as a time for the knowledge [*al-'ilm bi-mashy Zayd fī ghad, in fuhima ghad waqt li-l-mashy, kāna ma'nāhu ghayr ma'nāhu in fuhima waqt li-l-'ilm*, 78.6-7].

The gist is that the proof generalizes hastily when it uses the term "God's knowledge." Thus even if we were to accept that God's foreknowledge necessitated the existence or non-existence of its objects, a proponent of the proof would need to show how every single piece of God's foreknowledge necessitated the existence or non-existence of its objects.[290] This would be very difficult if not impossible, since the number of things in God's knowledge may be uncountable or infinite.[291]

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[290] Recall that Yaḥyā does not deny that God's knowledge encompasses all things, although he does deny that it determines them. Hence this critique may also be applied to defenders of the contingent; in the same way that the proponents of the proof may be tasked with showing how each particular piece of God's knowledge determines the existence or non-existence of its objects, the defenders of the contingent may be tasked with demonstrating that each particular piece of God's knowledge does not determine the status of its objects. The most natural way out of this would be to note that the burden of proof is on the proponents of the proof, i.e. those who argue that God's foreknowledge determines all things, to show that the notion of God's knowledge is meaningful despite including a possibly infinite number of facts.

[291] 77.14-15; that particulars are very numerous in quantity and subject to generation and corruption is one of the reasons why Avicenna believed that God knew particulars only "from a universal point of view" [*min jiha kulliyya*; Marmura, "Some aspects of Avicenna's theory of God's knowledge of particulars," 300-1].

IV. The Constructive Section (78.17-81.9)

After having presented the proof (Chapters 1 and 2), refuted it (Chapter 3), specified how and where it errs (Chapter 4), and provided pointers to those who defend the contingent (Chapter 5), Yaḥyā in Chapter 6 offers his positive doctrine concerning the nature of contingency. It is divided into two parts; the first focuses on presenting the true doctrine regarding contingency [*al-iʿtiqād al-ṣādiq fīhi*, 78.18]. The second introduces Aristotle's *De Interpretatione* and the determinist proof based on the necessary truth or falsity of future contingent propositions. In the first section, Yaḥyā makes a methodological point that in verifying if something exists or not, one first summarizes the meaning of the name of the thing whose existence is in question [i.e. its meaning, *talkhīṣ mā yadullu ʿalayhi ismuhu* 79.2-3]. Then one checks if this meaning is found among existing things. If it is, then one must believe in the reality of the concept.[292] Thus Yaḥyā will summarize the meaning of contingency, and then see if that definition is found among the things which exist. If the definition is found, then the reality of the contingent is confirmed.

Yaḥyā defines the contingent as that which is which is neither necessary of nor necessary of non-existence [*mā laysa bi-ḍarūrī al-wujūd wa-lā ḍarūrī al-ʿadam*, 79.7]. This is two-sided possibility, as we discussed above. Since that which is necessary of existence is that which exists always [*alladhī wujūduhu dāʾim*, 79.9] and that which is necessary of non-existence is that which is non-existent always [*alladhī ʿadamuhu dāʾim*, 79.10], and since what is contingent is that which is neither necessary of existence nor necessary of non-existence, then what is contingent is that which not always exist and also that which does not always not exist [*mā laysa bi-dāʾim al-wujūd, wa-lā dāʾim al-ʿadam*, 79.11-2]. The contingent is thus what exists sometimes.

With the definition of the concept of the contingent defined as that whose non-existence and existence is not permanent, Yaḥyā looks to see if there are things which meet this description. He observes that walking for humans [*al-mashy fī al-insān*, 79.18] is an example of something which sometimes exists sometimes and sometimes does not exist. This is because it is

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[292] Thus if we wanted to verify the reality of humanity, we would first summarize the concept [*maʿnā*] to which the name "human" refers, which we can say is rational animal. Then we would look at the things which exist and check if anyone of them is a rational animal. If at least one is, then we must accept the reality of humanity.

clear that there are humans who walk but also humans who do not walk: humans sometimes walk, and they also sometimes do not walk. It is something which is neither permanent of existence nor permanent of non-existence. Thus it follows that walking for humans is contingent, and this means that the reality of contingency exists; there is at least one contingent thing.

In the second section of Chapter 6, Yaḥyā writes that he will conclude his treatise by adding to it a discussion of the disagreements among ancient philosophers [*mā al-khilāf bayna al-falāsifa al-qudamā'*, 80.3-4] with respect to the question of contingency [*amr al-mumkin*, 80.4]. This consists of looking at Aristotle's discussion in *De Interpretatione* about whether future particulars [*al-juz'iyyāt fī al-zamān al-mustaqbal*, 80.7] are contingent or necessary. This discussion is undertaken in Chapter 7, the final chapter of the treatise, which we will not examine here.

V.   Conclusion

This wraps up our presentation and analysis of the first six chapters of Yaḥyā's *Risāla fī Ithbāt Ṭabī'at al-Mumkin* (*Treatise on the Affirmation of the Nature of the Contingent*). At the outset of the chapter, we wrote that we sought to answer three questions. First, we sought to understand how Yaḥyā presents the determinist proof from divine foreknowledge. We saw that Yaḥyā frames the problem, like al-Fārābī and their late-antique predecessors, as one which assumes the infallible and all-encompassing nature of God's knowledge, and concludes that determinism must be true. If God knows all things, and His knowledge must correspond to how things are [*'alā mā hiya 'alayh*], and if His knowledge is necessary [*ḍarurī*] insofar as it is immutable, then contingency [*imkān*] is unreal.

Second, we sought to understand his refutation of the proof. We saw that Yaḥyā's first refutation, which he labels as a refutation, does not actually refute the problem as he presents it. This is because his refutation in Chapter 3 demonstrates that God's knowledge is not a cause of its objects, while the proof he presents in Chapter 2 does not require this as a premise. Despite offering an irrelevant refutation in Chapter 3, Yaḥyā does offer an effective solution in Chapters 4 and 5, although he does not label it as such. In Chapter 5, Yaḥyā writes that something may be contingent when taken alone [*'alā al-tajrīd*], but become necessary of existence [*ḍarūrī al-*

wujūd] or necessary of non-existence [*mumtani' al-wujūd*] when taken with certain conditions or descriptions. We argued that Yaḥyā probably had the Aristotelian simple/hypothetical necessity split in mind: God's knowledge does not necessitate the future because the type of necessity it confers upon its objects is not simple necessity, but rather hypothetical necessity. The latter is compatible with contingency while the former is not.

This move on its own is insufficient, however, since divine knowledge is immutable. This means that if God knows Zayd as walking to the market, then although Zayd's walking retains an intrinsic contingency, God cannot know Zayd as anything but walking to the market tomorrow, and Zayd must walk tomorrow. Yaḥyā, however, allows in Chapter 4 that God's knowledge can change in time and denies that the status of God insofar as he is a knower [*min ḥaythu huwa 'ālim*] is one of complete necessity. This means that when tomorrow comes, and Zayd sets out for the market, God will go from knowing him as not going to the market to knowing him as going to the market. If we accept Ehrig-Eggert's reading of *lawāzim* as accidents or descriptions, then it is likely that Yaḥyā is drawing from *Categories* 7 in arguing that knowledge is a relative and thereby cleaving God qua God from God qua knower: the descriptions [*lawāzim*] of God when He is considered abstractly may include immutability, but they may not when He is considered in relation to something else via knowledge since knowledge is a relative. This move allows Yaḥyā to preempt an objection that it is impossible that God change in accordance with the change of wordly objects as Yaḥyā seems to have it. Yaḥyā's focus on the relative nature of knowledge puts him in a position where he can allow for change in divine knowledge without needing to affirm variance in God's essence, since changes in relata do not constitute a change in the thing itself, i.e. its essence. In this sense Yaḥyā's solution has two parts; the first denies the correspondence of knower and known, and the second observes that a change in divine knowledge does not entail a change in God Himself.

Yaḥyā's original solution poses at least two philosophical concerns. First, it seems that Yaḥyā's solution allows for God's knowledge to change according to the events in the world. This affords worldly events a type of causal priority over the divine, which seems counterintuitive since the divine should be prior to all things insofar as God is the creator of all. The divine ought to cause things to change, not the other way around. Secondly, it is unclear

whether Yaḥyā satisfactorily demonstrates that change in God qua knower need not constitute change in God. Even if we accept Aristotle's description of knowledge as a type of relative, it still seems that if God's knowledge changes, then God has in some way changed.

Finally, we sought to compare Yaḥyā's treatment of the problem of divine foreknowledge to that of the authors we examined in Chapter 2. As we saw, Yaḥyā's focus on the problem of divine foreknowledge, calling it the strongest determinist proof and discussing it before dealing with the problem of future contingents, is something he has in common with Ammonius and Stephanus. Boethius also qualifies the problem of divine foreknowledge as a tricky paradox, and he dedicates the last book of the *Consolatione* to treating it. Al-Fārābī is the outlier; his relatively short and inconclusive discussion of the problem at the end of his commentary on *De Interpretatione* suggests that he was not as interested in the problem as Yaḥyā and their late-antique predecessors. We noted some of the interesting features of Chapter 4: Yaḥyā's move to decouple the features of the knower from the features of the known contains elements of the solution that Ammonius and Stephanus attribute to Iamblichus. Everyone but al-Fārābī uses this move to explain how an eternal knower is able to know finite things. We also noted that Yaḥyā's denying the complete immutability of divine knowledge is an innovative that allows Yaḥyā to avoid some of the problems that arise from the approaches of Boethius and Ammonius. On one end Yaḥyā, following Iamblichus, seeks to separate divine knowledge from its objects insofar as God qua knower is eternal while the objects of His knowledge are not. On the other hand, possibly following Porphyry, Yaḥyā seeks to relate divine knowledge with its objects, in that change in the latter must accompany change in the former.

Concluding Remarks

In this closing section we summarize our discussion and point to questions and texts to be explored in future research. In Chapter 1 we presented the life and works of Yaḥyā ibn ʿAdī, noting that he was a translator, peripatetic philosopher, as well as a Christian theologian. We discussed Yaḥyā's historical milieu, situating him at the heart of the Graeco-Arabic translation movement in 10th-century CE Baghdad. We noted that some scholars consider the intellectual currents in early Medieval Baghdad to represent extensions of those of late-antique Alexandria. We provided a review of the literature published about Yaḥyā and we mentioned the ways in which his contribution to the Islamic reception of Greek thought has often been overlooked. We examined a historiographical concern regarding the "Islamic" nature of Yaḥyā's thought, problematizing whether it is appropriate to consider him an Islamic thinker doing Islamic philosophy, or whether it is more appropriate to view him as an Arabic thinker doing Arabic philosophy. We concluded that we sould call Yaḥyā an Islamic thinker doing Islamic philosophy, but that what we mean by "Islamic" is simply that Yaḥyā participated in a civilization established and governed by Muslims, not that Yaḥyā's thought has roots in the religion of Islam.

Chapter 2 focused on presenting the problem of future contingents and the problem of divine knowledge, and tracing their history from antiquity until Yaḥyā's time. This included examining Aristotle's *De Interpretatione*, the point of departure for commentators on the problem of future contingents and the problem of divine foreknowledge. We then presented its reception in the works of Boethius, Ammonius, Stephanus, and al-Fārābī. We noted some aspects that were common to all thinkers. For example, we saw that all of these thinkers utilize the Aristotelian distinction between simple and hypothetical necessity to help de-fang the deterministic concerns posed by the problems. We also saw that use of the notions of "definite" and "indefinite" truth was a standard feature of the commentaries on *De Interpretatione* IX. We noted some aspects particular to certain thinkers. For example, Boethius' and Ammonius' solutions to the problem of divine foreknowledge rely on the idea that divine knowledge is non-temporal; God does not know future events because to God there is no such thing as a future event: he sees all events as though they were occurring in a kind of timeless present. Ammonius

and Boethius are vulnerable to an objection based on the immutability and infallibility of divine knowledge. If God's knowledge always correctly maps onto the world, and if this knowledge can never change, then there is nothing we can do today to change what (God knows) we will do tomorrow. This objection works also if God's knowledge is timelessly present. We saw that al-Fārābī's discussion of the problem of divine foreknowledge, when compared to his commentary on *De Interpretatine* IX, seemed truncated and inconclusive. Nevertheless, he realizes that his tentative solution to the problem of divine foreknowledge, despite his reticence and apprehension, carries important modal consequences.

　　Chapter 3 concentrated on unpacking Yaḥyā's treatise, focusing on the first six chapters where Yaḥyā presents and refutes the determinist conclusions of the problem of divine foreknowledge. We saw that Yaḥyā's formulation of the problem of divine foreknowledge is standard: it assumes God's all-encompassing and infallible knowledge and concludes that contingency is unreal. We noted that what Yaḥyā labels as his refutation of the proof is not actually a refutation of that particular proof. This is because the proof argues that things in the world must conform to God's knowledge of them because God's knowledge is infallible. Yaḥyā, by contrast, refutes the idea that God's knowledge is a cause of worldly events, a claim that was never made when Yaḥyā initially set out the proof. In this sense he seems to conflate an argument for causal determinism for an argument for logical determinism. We saw that there is significant historical precedent for denying causal efficany of God's knowledge. We suggested that perhaps Yaḥyā had the influential Christian theologian Origen in mind, who bases his refutation of the problem of divine foreknowledge on the idea that worldly events cause divine knowledge to be the way it is, not the other way around. Ammonius could also be a source for this move, since he also denies causal efficacy to divine knowledge, but it does not represent the core of his response to the problem. Saadia Gaon, a Jewish contemporary of Yaḥyā, also uses this move to refute the conclusion of the proof.

　　We saw, however, that in Chapters 4 and 5 of the treatise, Yaḥyā provides an adequate and innovative solution to the problem. The first part consists in observing that the status of the knower need not correspond to the status of the known; thus an eternal and immutable being may know things that are in themselves finite and changing. This solution is similar to the one that

Ammonius and Stephanus endorse and attribute to Iamblichus. Yaḥyā could have learned of the Iamblichean solution from Stephanus' or Iamblichus' commentaries on *De Interpretatione* IX , which al-Nadīm's *Fihrist* lists as extant and in circulation. The second part of the solution notes, as Aristotle asserts in *Categories* 7, that knowledge is a relative, and that relata do not factor into the essences of things. Hence change in divine knowledge does not constitute a change in God Himself. This is why things in the world can change, and God's knowledge can reflect this change, without God Himself changing. Putting these together, this means that God may know Zayd as walking to the market tomorrow, but since the status of knower need not correspond to the status of the known, God may be an eternal and immutable thing while Zayd's market trip is not. Furthermore, since divine knowledge can change, if Zayd were to change his mind and decide to stay home, God's knowledge of his trip would change accordingly. Since knowledge is a relation, this change in the events of the world do not entail a change in God Himself. This solution, which draws from Aristotle as well as (possibly) Iamblichus, is innovative. It avoids the objection to which Boethius and Ammonius are vulnerable, since Yaḥyā, unlike the former, grants that divine knowledge can change in accordance with change in its objects. We noted also that Yaḥyā may also draw from Porphyry, who, according to Proclus, thought that divine knowledge corresponds to its objects in their changeability. Al-Nadīm also mentions Porphyry's commentary on *De Interpretatione*.

In Chapter 5 Yaḥyā, like his late antique predecessors and al-Fārābī, makes use of the simple/hypothetical necessity split to explain how events may themselves be contingent, but then become necessary (of existence or non-existence) through the addition of an external relation or condition. We noted that this in anticipates aspects of Avicenna's later metaphysical distinctions between that which is necessary by virtue of itself and that which is necessary by virtue of another. It also explains why God can know things without eliminating their intrinsic contingency.

In light of our discussion, we can revisit the concerns we posited in Chapter 1. First, we saw that, at least in what concerns Yaḥyā's treatment of the problem of divine foreknowledge, Yaḥyā's understanding and treatment of the problem displays clear continuity with his Alexandrian predecessors. Origen is from Alexandria, and like him Yaḥyā attempts to treat the

problem of divine foreknowledge by denying that divine knowledge causes things in the world. Ammonius and Stephanus, both Alexandrian thinkers, appeal, like Yaḥyā, to the distinction between hypothetical and simple necessity in order to explain how events may be necessary through God's knowledge of them while remaining in themselves contingent. Finally, we saw Yaḥyā make use of the Iamblichean solution also adopted by Ammonius and Stephanus. Whether we should speak of a general transfer of late-antique Alexandrian intellectual culture to Abbasid Baghdad is a question outside of our scope, but we have seen that there is substantive continuity between Yaḥyā and the thinkers of late-antique Alexandria in what concerns the commentatorial tradition around *De Interpretatione* IX.

Several questions remain. Some pertain directly to the sections of the treatise which we examined, while others require research beyond the material investigated here. First, why does Yaḥyā dedicate so much space and effort to refuting the claim that God's knowledge causes things in the world, when his exposition of the determinist proof from divine foreknowledge does not? Second, what is the purpose of the "second introduction" found at the beginning of Chapter 4, where Yaḥyā states that what he is about to discuss requires skill and experience to grasp? Third, how satisfactory is Yaḥyā's solution to the problem of divine foreknowledge? We noted that it avoids an objection posed to Ammonius and Boethius, but Yaḥyā's solution may be problematic in that it seems to hold that divine knowledge follows worldly events. This may be counter-intuitive since it would seem that that things must follow God's knowledge of them, not the other way around. Another point of concern is Yaḥyā's attempt to cleavage God qua knower away from God qua God. It is questionable whether Yaḥyā satisfactorily explains why change in divine knowledge does not constitute change in God. If God knew Zayd as staying home, but then came to know him as walking to the market, it seems that some aspect of God has meaningfully changed. Yaḥyā does not provide us enough detail about his understanding of the metaphysics of divine knowledge and the divine attributes to enable us to fairly evaluate his position.

Moving on to the external questions, the first is to extend our analysis to Chapter 7 of the treatise, which we translated but did not examine. Chapter 7 is a lemmatized commentary on *De Interpretatione* IX, and examining it will help shed light on the Islamic reception of the sea-

battle problem. Does Yaḥyā, like al-Fārābī, setup his response in terms of definite and indefinite knowledge? Does he offer a response which aligns with the traditional and non-traditional solutions? Finally, as we noted in Chapter 1, Wisnovsky recently discovered a number of Yaḥyā's treatises that scholars had long taken to be lost. Among these are *Jawāb Abī Bakar al-Daqqāq ʿan al-shubhah fī ibṭāl al-mumkin* [Abu Bakr al-Daqqāq's Answer to the Aporia concerning the Invalidation of the Contingent] and [*Maqālah fī tabyīn ḍalālat man yaʿtaqid annaʿilm al-bārī jalla thanāʾuhu wa-taqaddasat asmāʾuhu b-il-umūr al-mumkinah qabla wujūdihā mumtaniʿ* [Treatise on Presenting the Error of One Who Thinks that the Creator's Knowledge (Exalted be He) of Contingent Things before their Existence is Impossible]. These unedited treatises likely contain useful primary source material about Yaḥyā's understanding of *imkān* as well as the nature of divine knowledge, and would enrich our understanding of Yaḥyā's views on contingency.

Wallāhū Aʿlam

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Appendix: Translation of *Risāla fī Ithbāt Ṭabī'at al-Mumkin*

In the name of God, the Most Beneficent, the Most Merciful

A transcription [*nuskha*, 63.4] of what Abū Zakariyyā Yaḥyā ibn 'Adī b. Ḥamīd ibn Zakariyya wrote to Abū Bakr Aḥmad ibn Muḥammad ibn 'Abd al-Raḥmān ibn al-Ḥasan ibn Quraysh on affirming the nature of the contingent, refuting the proofs of the opponents [of the nature of the contingent], and warning [*tanbīh*, 63.6] of the invalidity [of their proofs].

Confirmed are your virtues and commendable is your good character, oh greatly eminent one and momentously important one, the dearest of companions. May God bestow upon you from the light of wisdom, that will make you arrive at the most well-guided of doctrines, the most praiseworthy of ranks [*aḥmad al-marātib*, 63.9] and the happiest of end-results. The most pressing of my concerns is to amplify what will [hopefully] please you. My obligation is to proceed with what conforms to your desire. I am most earnest in hurrying to fulfill what he requires in accordance with my effort and the capacity of my capability. I hope to elucidate that which you have repeatedly indicated, and which you have repeatedly directed my investigations towards, regarding the aspiration of your noble soul, may God grant it long life and the best of [its] wishes, to attain knowledge regarding it;[293] and to make [things] clear for you by laying bare the aporia about which the difference [of opinions] of researchers has become extensive, and the contradiction of the theories has multiplied. The adversity of the thinkers' opinions [*maḍādat afkār al-mufakkirīn*, 63.13-14] has multiplied, and the sources of those who study it have varied widely, and the methods of their doctrines have branched out [*tasha''abat*, 63.14] in [their] arguments for and against it. "It" is the existence of the contingent, and whether there is among things that whose existence and non-existence is contingent, or not? [64] [I am] seeking [*multamis*, 64.1] to elucidate it with the most clear of what my thought arrives to, and the most accurate of what my memory extends and the clearest of which my expression is capable.

It comprises seven chapters. The first chapter is its introduction and it is split into two parts. The first of the two [parts] is on the enumeration [*ta'dīd*, 64.4] of the types of arguments of those who have examined the subject. The second [part] is about what is to be contradicted in the

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[293] the contingent.

arguments of the opponents of the truth. The second chapter concerns the recounting of the strongest proof of the opponents of the truth in order to confirm and verify their argument. The third chapter is about the exposition of the foundation [of this proof] and its refutation. [294] It is split into seven parts. The first part is about the mentioning of the foundation of the strongest argument] and the enumeration of the causes of all created [beings]. The second [part] is about the invalidation of foreknowledge as a material cause of the necessity of things. The third [part] is about how it is not a formal cause [of the necessity of things]. The fourth [part] is about how it is not an efficient cause [of the necessity of things]. The fifth [part] is about how it is not a final cause [of the necessity of things]. The sixth is about how it is not an instrumental [*adawī*, 64.10] cause [of the necessity of things]. The seventh [part] is about how it is not a paradigmatic [*mithālī*, 64.11] cause of the necessity of all things. The fourth chapter is about the clarification of the method [of the proof] and the demonstration of the falsity of its premises and their invalidation. The fifth chapter is about indicating the ways that one may protect oneself from error while defending the truth of the subject [at hand]. The sixth chapter is about the establishment of the true doctrine about the topic at hand. It is divided into two parts. The first part concerns the intended purpose of this treatise and it is the demonstration of the existence of the nature of the contingent and that there indeed exist contingent things. The second part is concerned with thorough examination of the concept [of the contingent] and the exposition of the truth with respect to what the disagreement among the ancient philosophers is limited to concerning the question of the contingent.

The seventh chapter is about the careful recounting [*iqtiṣāṣ*, 64.17] of Aristotle's argument regarding the proof of the deniers of the contingent taken from the necessary truth of one of the contradictories [*naqīḍayn*, 64.18] [within a contradictory] pair and the [necessary] falseness of the other, his proofs for [contingency's] existence, and his warnings concerning the locations of the error [in the proof]. It is divided into two parts. The first of the two is about the careful recounting of Aristotle's arguments on [65] the proof of the deniers of the contingent and his proofs regarding its affirmation and on the exposition of the locations of error within the

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[294] Reading *ussihā* as opposed to *anniyyatihā* in order that it repeat the title of chapter 3, 68.9. This reading is also supported by the Marwī MS, 43b8.

proofs of the deniers of the contingent as it is without any change or addition or subtraction. The second of them is our explanation of Aristotle's argument, which we divided up and reported in detail. It is divided into three parts. The first is the explanation of his discussion about the proofs of the deniers of the contingent. The second is the explanation of his arguments about his proofs for the affirmation of the contingent. The third is about his warning of his indication of the location of the error within the proofs of the opponents [of the contingent]. [I do this relying] on God, knower of that which is hidden, for my guidance to His truths. I rely on Him as a guide to the most direct of His paths. He is sufficient in protecting me from the error in speech and in action and He is entirely enough for me. Indeed it is required for him who wants his proofs to be sufficient for his audience and [who wants] his demonstrations to be curative [*shāfiyan*, 65.9] for his opponents, that he offer a clarification of the confused doubts regarding his ideas before following that [with] the clarification of the truth in [them]. Thus we begin by uncovering the worst of the disseminated [*fāshiya*, 65.10] confusions about the nature of contingency, while assuming that they are true [*taẓāhuran,* 65.10]. Then we will follow this up with the clarification of its truth, with the help of God all-Powerful and Almighty.

  [Chapter 1]

The first section on the enumeration of the types of theorists' arguments regarding the subject at hand. Theorists [*ahl al-naẓar*, 65.14] are in disagreement with respect to the contingent. There are those among them who have affirmed its existence and subscribed to the belief that there are things whose existence and non-existence are [both] possible. And there are those among them those who have rejected its existence; they have argued that all things are necessary and that there is nothing in which existence and non-existence are [both] possible. Despite their disagreement, they are in agreement that there is no contingency in all things predicated with existence [*al-maḥkūm bi-wujūdihā*, 65.15] or non-existence in a past time or in a present one. The disagreement among them concerns [solely] the existence of contingency in what is predicated with existence or non-existence in the future, such as the walking of human or of Zayd tomorrow, for example.

[66] The second part about the recounting of the refutations of [the contingent] present in the arguments of the opponents of the truth. This group has used many proofs to justify their

arguments. The most reasonable and least problematic of these are two proofs. One of them is rooted in the foreknowledge [*ṣābiq al-'ilm*, 66.5] of the Creator, glorified be His name beyond that which the misguided say. The other is taken from the necessary truth of one of the contradictories [within a contradictory pair] and the [necessary] falseness of the other. I will refute the proof taken from foreknowledge and I will recount carefully [*muqtaṣṣ*, 66. 5] Aristotle's argument regarding the proof taken from the two contradictories as well as his refutation of it.

Chapter 2, on the recounting of the strongest of the proofs of the defectors from the truth in order to confirm and verify their argument.

They have argued that it is non-controversial [*min al-mujtami' 'alayh*, 66.7-8] that the Creator, blessed and exalted be He, know all that exists and all that is coming to be, and that it is not the case that He did not know [the two] and then came to know them. He has rather always been knowledgeable [of them]. Indeed the Knower must know the truth of things if He knows them as they are [*'alā mā hiya 'alayh*, 66.10]. It is then necessary that the status of the known [*ḥāl al-ma'lūmāt*, 66.11] correspond to the status of the knower [*muwāfiqa li-ḥāl al- 'ālim*, 66.11] qua a knower of [them] [*min ḥaythu huwa 'ālim bihā*, 66.11]. The status of this knower qua knower, [*min ḥaythu huwa 'ālim*, 66.12] is one of necessity since [this knowledge] is fixed in existence [*thābitat al-wujūd*, 66.12] and immutable. Thus the status of the objects of His knowledge is [likewise] necessarily unchanging and immutable.

So that whose existence is known to Him necessarily exists, since it is impossible that He become knowledgeable of its non-existence, because it is impossible that it be non-existent. And that whose non-existence is known to Him, because it is impossible that He become knowledgeable of its existence, must necessarily not exist because it is impossible that it be [come to be] existent. This is because He knows all things, not some things and not other things; all things are known to Him, and everything which is known to Him must be necessarily immutable with respect to its existence or its non-existence, as we have shown. Thus all things are immutable in their existential statuses, and everything which undergoes a change in its existential status is impossible [and] not contingent. Thus all things are not [67] contingent; there is nothing which is contingent and the nature of contingency does not exist. If the nature of

contingency existed, that is if it had existence, then its existence would necessarily imply that there are things in which it is found. It would then be necessary that there be contingent things, but the impossibility of this has been demonstrated, and that whose positing implies an impossibility is impossible. This impossibility [that contingency is impossible] has been entailed by the positing of the reality of the nature of contingency, and thus the existence of contingency is impossible. This is the strongest of the proofs of this group [who deny the reality of contingency]. We have explained and reinforced and verified it [*akkadnāhā*, 67.6] to the best degree possible.

Chapter 3, on the exposition of the foundation [*uss*, 67.8] [of this proof] and its refutation, and it is divided into seven parts. The first part is on the recounting of its foundation and the enumeration of the causes of all generated beings. We will follow this up with pointing to the principle [of the argument] upon which it is built and the origin from which it has sprung. We say that it has been believed that foreknowledge is a cause which entails the necessity of things [*mūjib ḍarūriyyat al-umūr*, 67.11]. Thus if it is demonstrated that it is not a cause of it [i.e. the necessity of things], then the proof is refuted through the undoing of its principle, and [it is] without its pillars due to the corruptness of its basis. The proof for this is to say that the causes are six:

Material like gold for a golden ring, formal like its roundness and hollowness, efficient like its maker, final and this is of two types: one of them is that which if [the] maker achieves it, then he stops what he is doing, and that in this case is the form [of the ring] itself, i.e. hollowness and roundness, even if its meaning insofar as it is complete is different than its meaning insofar as it is [fulfilling] a form. The other of these two is the use intended through the achievement of the material form, such as the wearing of it as a ring. [The other causes are] paradigmatic like the form [of the ring] in the soul of its maker in accordance with which it is made, and instrumental like the gavel used in its making.

The second part, on the invalidation [*ibṭāl*, 67.18] of foreknowledge as a material cause of the necessity of things. It is not possible that [foreknowledge] be a material cause. Firstly, this is because the material is a material for the thing which is composed of it, and of some form, but there is nothing which is composed of this knowledge. Furthermore, [68] material exists in the

composed thing itself like the existence of the part in the whole, but we do not find foreknowledge as a part of the necessity of things. Additionally, the form of each composed thing is more noble [*ashraf*, 68.2] than its material, but it is most abhorrent that it be said that the necessity of things is more noble than foreknowledge.

Thus it has been demonstrated that foreknowledge is not a material cause of the necessity of things.

[The third part], that it is not a formal cause of [the necessity of things]. It is not possible that it be a formal cause of [the necessity of things], since material form requires in its subsistence [*qawāmihā*, 68.6] and in its existence a material like how the form of the drink made from the material of grape [i.e. wine] needs juice in its existence [in order to be wine]. But it is abhorrent to say that the necessity of things is prior to foreknowledge.

The fourth part, that it is not an efficient cause of [the necessity of things]. It is also not an efficient cause [*sabab fāʿil,* 68.9] since the efficient cause must do what it does by means of its nature, like fire's heating of bodies which are close to it and configured [*muhayya'a*, 68.11] to accept its warmth, and like sunlight's effect light of the Sun on that which is in the air that it [the sun] rises up over. It is not possible that knowledge be an efficient cause in this way. This is because the existence of the efficient cause in this way is simultaneous with its object, whereas this knowledge is prior to the objects of its knowledge. [Another way that something may be an efficient cause of something else is] that it be an efficient cause by its own choice, but this only occurs in efficient causes capable of doing a particular thing or not doing it. This requires the contingency of the existent in which the capacity [*qudra*, 68.15] to exist or not exist is found.

This contradicts the necessity of things, since it is obviously clear that for that which is necessary of existence, the capacity is only for its existence — not for its non-existence. But that which is necessary of non-existence, the capacity is only for its non-existence and not its existence. This is because it is not possible that that whose non-existence is necessary exist, just as it is not possible that that whose existence is necessary not exist. [69] Thus if these people [*hā'ulā' al-qawm*, 69.1] affirm that there is a capacity for the existence or non-existence of one thing, then they must accept that which they [initially] denied with respect to the existence of the nature of the contingent. This is because everything which is limited [*maqṣūr*, 69.2] to existence

or non-existence is contingent. This is because the contingent is nothing other than what exists and does not exist from one situation to another [*fī ḥāl wa-ḥāl*, 69.2].

Furthermore, the status of the necessity of things with respect to the foreknowledge is different from the status of the [created] object with respect to its efficient cause. This is because for every efficient cause, if we imagine the removal of its existence before the existence of the object of its action, or during its existence, then the removal of the existence of the object of the action is invariably required. [However,] it is possible to imagine the removal of the existence of foreknowledge before the existence of the necessity of things, or during its existence, but the removal of the existence of the necessity of things is invariably not required. Thus it follows from these two premises, of the second form and the second type, that foreknowledge is not an efficient cause of the necessity of things.

The fifth section, that it is not a final cause of [the necessity of things]. Nor is it possible that the knowledge be a final cause of the necessity of things. This is because perfection [*kamāl*, 69.11] as we noted, is two: a first and a second [type]. As for the first of the two, this is the form itself and this is like the first perfection of writing, namely the form of the craft of writing [*ṣūrat ṣinā'at al-kitāba*]. If it is perfected and actualized [*tammat wa-kamalat*, 69.12] in the soul of Zayd, for example, then he becomes by means of [that perfection] a writer. Thus it is not possible that foreknowledge be a perfection in this way. That is because every form is dependent in its existence on its material. But it is abhorrent to say about this knowledge that it is dependent in its existence on the necessity of things.

Furthermore, in this type of perfection, its existence and the existence of that for which it is a completion are concomitant; neither of the two is prior to the other. And it is abhorrent to say that the necessity of things and this knowledge are concomitant. Despite this, those who make this argument admit the priority of the knowledge and the anteriority of the necessity of things. It is thus demonstrated that the knowledge is not a final cause in this way.

The second type of perfection is the benefit obtained from something which has the first type of perfection, such as the benefit [*intifā'*, 69.12] [70] gained from the craft of writing, which is the keeping in perpetuity [*takhlīd*, 70.1] of distant statements, ideas, and conversations. It is not possible that this knowledge be a final cause in this way. This is because this perfection is

posterior in time than that for which it is a perfection, such as the posteriority in time of the benefit of the craft of writing, which is the keeping in perpetuity of distant statements, ideas, and conversations, to the craft of writing which is established [*rāsikha*, 70.4] in the soul of the writer. This knowledge is prior in time to the necessity of things. Thus [this] knowledge is not a final cause of the necessity of things.

The sixth section, that it is not an instrumental cause of [the necessity of things]. It is also demonstrated that it is not a instrumental cause of [the necessity of things]. This is because instruments differ in nature from the thing which is created using them. This is because if their two natures were one then [the instruments] would be efficient causes and not instrumental causes. An example of this among manual instruments [*al-adawāt al-ṣinā'iyya*, 70.9] is the hatchet [*fa'as*, 70.10] for the carpenter; it is different in nature from the nature of the door which is carved using it. As for the natural instruments [*al-adawāt al-ṭabī'iyya*, 70.11], clear air [*al-hawā al-mushiff*, 70.11] is an instrument for sight and it is different in nature than the nature of the colors, which are the primary visibles [*al-mabṣūrāt al-ūlā*, 70.12].

Furthermore the form of the object of the knowledge [*ṣūrat al-ma'lūm*, 70.13] is the knowledge itself and that is because the knowledge is nothing other than the [presence of the] form of the object of the knowledge in the soul of the knower. The only difference between them is that the subject of the knowledge which is found in [the knower] is identical to the soul of the knower, while the subject of the form of a material object of knowledge is matter, as we demonstrated in the treatise which we produced regarding the exposition of the quiddity of knowledge.

Moreover, instruments are of two types. The first of the two is such that the created thing cannot be created with something other than [that instrument]. The example of this among the natural instruments is like the lung and breathing; it is not possible that there be breathing, I mean the inhaling of air from outside and the expulsion of it from inside, without [the lung]. As for the example from among the manual tools of craft, it is like the lute; it is not possible that the sound which is produced by it be produced by something other than it.

It is clear that the necessity of things is independent in its existence from the knowledge of [the necessity of things]. Indeed if it were imagined as being unknown, then the removal of

the knowledge of it would not require the removal of it itself. I do not mean [71] that it is independent from there being a piece of information about the knowledge in it; I only mean that [the necessity of things] is independent in its existence from [foreknowledge of it]. Thus the knowledge is not is not an instrumental cause of the necessity of things as this type of instrument.

The other type of types of instruments are those where it is possible to do what is done with [the instrument] with some other instrument, except for that if [the first instrument] is used to do the thing which is specific to it, then [the product] is of higher quality [*ajwad*, 71.4] than if it were done with something else, like the scalpel and bloodletting [*faṣd*, 71.4]. Indeed although it is possible to open veins with something other than a scalpel, such as a knife or a piece of glass, for example, their opening is best by means [of a scalpel].

The knowledge does not add nor substract from the necessity of things through its existence, nor does its removal invalidate [the necessity of things] such that it may be an instrument for [the necessity of things]. By saying this we only precluded that it be an instrument for it such that [we may] differentiate between the knowledge's being a tool and the knowledge's being a paradigmatic cause of [the necessity of things]. This is because if it were a paradigmatic cause in the soul of the knower, then there would be a definition which is beneficial for [determining the standards of] proficiency in what [the agent] intends to do, except for the fact that this is not [the case] because [the knowledge] is a instrument, but rather because it is a paradigmatic cause which is in the domain of the agent. Thus the knowledge is not an instrumental cause of the necessity of things in this way.

The seventh section, that it is not a paradigmatic cause of the necessity of contingent things. The knowledge is not a paradigmatic cause of the necessity of things which are in themselves contingent. This will be demonstrated when it is proven that there is among the existent things that whose existence [occurs] in accordance with contingency. This is because if knowledge is only the form of the object of knowledge in the knower, and the form of these contingent existents, insofar as they are contingent, is contingency, then real contingency would be incompatible with the two modes of necessity. This is because whatever is contingent by this type of real contingency is accepting of existence, and it therefore it is incompatible with the

necessity of non-existence, but it is also accepting of non-existence, and is [thus] likewise incompatible with the necessity of existence. Thus there is not among the things which are contingent any sort of necessity. And it is for this reason that [they] cannot be known necessarily.

That there is among existent things those which are contingent will be demonstrated, first, through explaining the meaning to which the term "contingent" refers, and, second, through examining existent things. If the meaning [of the term "contingent"] is found among them, then its existence will be demonstrated, and it will be [also] [72] demonstrated that this knowledge is not a paradigmatic cause of the necessity of contingent things. We intend to demonstrate the existence of the contingent after completing the rejection of this proof, clarifying its source and its method, and after indicating the ways to avoid errors when inquiring about [the contingent]. We do this with the aid of God and the best of His providence. So let this here be granted until it is demonstrated, and thus, by means of granting, it is clear that this knowledge is not a paradigmatic cause of the necessity of contingent things, even if it is a paradigmatic cause of the necessity of necessarily contingent things [*al-mumkina al-ḍarūriyya minhā*, 72.7].

With this demonstration the denial of the causality of this knowledge with respect to the necessity of things is complete. Syllogistically here is my argument: the cause of the necessity of any thing must be [exhaustively] a material, formal, agent, final, paradigmatic, or instrumental cause. But this knowledge is not a cause of the necessity of things; not materially nor formally nor efficiently nor finally nor paradigmatically nor instrumentally. Thus this knowledge is not a cause of the necessity of things, and this is what we wanted to show.

[Chapter 4]

As for the method of these errors and the manner of this aporia, they are the conflation [*tashābuk,* 72.13] of each one of the two relata [i.e. foreknowledge and the objects of that knowledge] with the other, and the interference of the concept of each one of them into the concept of the other such that they are not differentiated [anymore] in existence nor in conception.

The delineation of the entailments [*lawāzim*, 72.16] of things when [the things] are taken on their own, abstracted, without the addition of any description or condition or relation to something [else] is very difficult. Generally, [it is hard to differentiate between] the essences [of

things] when they are examined in themselves, individualized, and when they are taken with some condition or addition or description or [other] relation.

Oftentimes, the entailments of one thing [can within themselves] clash and even contradict [one another] when [the thing] is taken according to one of these two ways and [then] when [it] is taken according to the other. The difficulty of this delineation is such that it makes it very difficult to discern between the [entailments of things] due to the intensity of their similarity and the complicated nature of their differences, [*fuṣūlihā*, 72.21] [and due to the fact that they are] distinct in their essences and changing in the particulars of their attributes.

[73] Wheoever who seeks the clarification of their [i.e. about entailments] truths requires experience [*ḥunka*, 73.1] and courage [*durba*, 73.1] in noticing that which is unclear and [he requires] a piercing discernment in [understanding] problems and a sharp ability in clarifying sophistries. He is required, in trying to comprehend it, to have persistent and well-guided thought, and perseverance [*tasdīd al-fikr wa-l-ṣabr*, 73.3] against discouragement in seeking it. [He is also required to] be stripped of bias and partiality in contemplating it, and the use of level-headed thought [*suhūlat al-inqiyād*, 73.4] in his methods concerning it [is required]. [He also must be] tolerant in his judgment of the mind [who is seeking the clarification of its truths]. Hopefully, having all of these characteristics, they will reach their goal, and they [will] attain that which they sought.

Our discussion in this treatise is about this knowledge, and our goal is the differentiation between the entailments [*lawāzim*, 73.6] [of the knowledge itself] when taken abstractly and the entailments [of the knowledge] when taken with the addition of descriptions or conditions or [other] relations [*ṣifāt aw sharā'ṭ aw iḍafāt*, 73.7]. Knowledge is of the nature of "relata" [*muḍāfāt*, 73.8], and it is [the nature of] relata which make very difficult the differentiation of some of relata from others. This is because [the relata] do not differ in conception nor in existence. It is for this reason that we must close the [above] described gaps before we [can] start understanding them.

In discussing [*mutakallim*, 73.11] [the relata], I will state what I can regarding them, namely that I do not hold back [any] ability of mine in drawing their meanings towards comprehension, but rather that I use [all my abilities]. I do not request a path which eases for me

their comprehension, but rather I will undertake it relying on God. If I reach the desired goal then praise be to God and His providence. If I am unable then it is due to my own weakness and shortcoming. I hope that I do not tarnish the rewards [*tawfīqihi*, 73.13] of those who expend efforts in the promulgation of good and the removal of harm. Indeed there is no good better than the knowledge of truth and there is no harm worse than false belief. Even if the abandonment of the ability to attain the good of his desire settles in he who expends effort, he is [still] rewarded if he was helpful and he is forgiven if he was stingy [*akdā*, 73.16].

So we say that this proof is built upon premises some of which are false if taken universally. This is because the premise which holds that it is necessary that the existential state of the object of knowledge correspond to the [existential] state of the knower insofar as he knows the state [of the object of knowledge], is false if it is taken absolutely [*idhā ukhidhat 'alā al-iṭlāq*, 73.19]. This is because it is not necessary that the existence of the object of knowledge correspond to the knower in all of its states insofar he is a knower [of the object] [74]. Indeed it is non-controversial that the existential state of this knowledge is [one of] eternity, but that the existential state of its object is not.

If [the premise] is understood in another acceptable manner, then he [who understands the premise in this way] has assumed the [very] first thing with which he disagrees. If it is understood as [saying] that is it necessary that the existential status of the object of the knowledge be [one of] necessity like how the status of the knower [is one of necessity] insofar as he knows [the object of the knowledge], then this, if contingency is affirmed, is false and not granted. And it [namely, the affirmation of contingency] is the subject of [the present] examination and [it is] the thing about which there is disagreement. The concept which entailed the truth of this premise is that the existential statuses of the objects of knowledge correspond in their form to what is present in the knower by way of similarity [*mumāthala*, 74.7]. The falsity of this premise has thus been demonstrated.

Furthermore the premise which holds that the state of the knower insofar as he is a knower is immutable, is false if it is taken absolutely without any condition. That is because necessity is not attributed to [the knowledge] in all aspects, for that would only be the case if none of its attributes [ever] change. This [immutability] is not present in it since the relation of

the knower to the object of the knowledge, which exists in certain situations and does not exist in others, changes according to the change of the status of the object of knowledge with respect to being or non-being.

This is [even if] the knower in itself was non-changing, since the relation of the knower to Zayd, for example, is a [certain] relation to his existence when Zayd exists, but it is a different relation when Zayd does not exist.

The proof of this is that the subsistence of the essence [*māhiyya*, 73.16] and the that-ness [*anniyya*, 73.16] of each one of the two relata [*muḍāfayn*, 73.16], insofar as [it is a relata], is only through its companion [i.e. the other relata], insofar as it is a relata.[295] This is like how the quiddity of Zayd insofar as he is a father to 'Amr relies on 'Amr insofar as he is [Zayd's] son. Whenever the son-ness of 'Amr is lost then the father-ness of Zayd is [also] lost. This is because Zayd is not a father if 'Amr is not a son, and 'Amr is not a son if Zayd is not a father. It must be known that we have used Zayd as a placeholder for all fathers and 'Amr as a placeholder place for all sons.

It is thus not satisfactory for the knower, insofar as he is a knower who is one in number and unchanging in [75] all aspects, that the subject [of his knowledge], which can be in various states, be one in number.

That is because the knowledge of Zayd's existence is numerically different than the knowledge of Zayd's non-existence. [This is the case] even though they are conjoined insofar as [the knowledge of Zayd's existence and non-existence] both represent knowledge of the same thing, and Zayd, being the subject of the existence or non-existence, is numerically one.

This is because knowledge is related to the known, and the whatness and thatness [mahiyya and anniyya] of two relata have their subsistence through the other by virtue of being a relata. The existence of one is not possible without the existence of the other as a relata. The knowledge of the existence of Zayd does not contain in its quiddity the non-existence of Zayd. Thus the knowledge of Zayd's existence is not the same as the knowledge of his non-existence.

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[295] *Anniyya* may also be read as *ayyiyya*, the "whichness" of a thing, i.e. what sort of thing it is. In the *Marwī* MS, *anniyya*/*ayyiyya* are left without points (اسها), allowing for both readings (MS *Marwī*, 45a25;45a31;45a33). Khalifat reads it is *inniyya*, Ehrig-Eggert reads it as *anniyya*. Khalifat (ed.), *Maqālāt Yaḥyā ibn 'Adī al-Falsafiyya*, 351.5; Ehrig-Eggert (ed.), *Nuskhah mā kataba bihi Yaḥyā ibn ʿAdī ilá Abī Bakr Aḥmad ibn Quraysh fī ithbāt ṭabīʿat al-mumkin*, 73.16)

Likewise the knowledge of Zayd's quiddity alone is different from the knowledge of Zayd's existent quiddity. This is because the knowledge of Zayd's quiddity abstracted from description in its quiddity is independent in its quiddity from the addition of "existent." The knowledge of Zayd's existent quiddity in its quiddity is not independent from the addition of "existent." Thus knowledge of Zayd's quiddity [abstracted from existence] is not identical to the knowledge of Zayd's existent quiddity.

It has been made clear that the relations of the knower insofar as he is a knower do indeed change with respect to the known by means of the change in the states of the known. Even if the knower is non-changing, then the statement that the knower insofar as he is a knower does not change is [still] false if it is taken absolutely, as it has been taken in this proof. The falsity of this premise has thus been made clear through what we have exemplified.

Those who use this proof must also accept the falsity of the premise which holds that the state of the knower insofar as he is a knower [need] correspond to the state of the object of the knowledge in necessity and immutability. [They must accept this] in the same way that they [accepted] the eternity of the Knower insofar as He is a knower, that He is [always] a knower and that he does not come to know after having not known. This is because if He were always knowledgeable of Zayd's quiddity, for example, and this never changes, then it is thus impossible that the fact that He knows [Zayd's quiddity] change, but the quiddity of Zayd if he exists is not the same as his quiddity if he does not exist with respect to the variation of [his] existence and non-existence.

But this requires change in the two quiddities [i.e. the quiddity of the knower and the known] since Zayd changed from non-being to being, and from being to non-being. So Zayd is the object of the knowledge and the necessity of his variation is clear, while the status of the knower of Zayd is unchanging in its essence. This contradicts what they have argued, but it follows from that which they have affirmed in this proof.

[76] If the statement that the state of the object of the knowledge is like the state of the knower insofar as He is a knower with respect to the necessity of existence and non-existence is false, then what they have tried to assert does not follow. We have thus established through what

we have discussed [above] the demonstration of the invalidity of this proof and [we have also clarified] how error enters into it and the method of the confusion concerning [this proof].

Chapter 5

Pointers about how one may protect oneself from the errors in the search for the truth in the subject at hand and [in] its defense.

After this we indicate the manners in which one may protect oneself from the errors committed by those investigating and defending the truth regarding this concept.

We say that one way to do this is not to believe and not to concede that all of the existential states of the knower correspond to all of the states of the objects of the knowledge, proving that by means of what we have already stated.

A second [way to do this] is [by noting] that once we abstract from [the essence of Zayd's walking] all attributes which must be affirmed of it, when it is attributed with whichever attribute it may be, not every situation implies a situation of existence or non-existence for the essence of Zayd's walking tomorrow. That is because the essence of Zayd's walking tomorrow, if it is not attributed with anything at all, is possible of existence and non-existence, as we will show. If some attribute were added to it — for example "he is tied to a post"— then this walking becomes impossible of existence and necessary of non-existence. But if some other attribute were added to it like, for example, that he is free from all the obstacles [*al-'awā'iq*, 76.16] to walking and he is desirous of [walking], then this walking becomes necessary of existence and impossible of non-existence. Likewise if it is said that Zayd's walking tomorrow is existent, then through the addition of this attribute [of existence] the contingency of Zayd's walking tomorrow is excluded [*yakhruju*, 76.17] by this addition and necessity becomes necessary for it. That is because it is impossible that the existent, when it is existent, be non-existent in that state. If Zayd's walking tomorrow is taken alone without the addition of [the attribute] 'existent' then contingent is required for it.

A third manner which one ought not to ignore and that ought to be present within the mind of him who sets out to prove the existence of the contingent is that [77] it is the same thing to say "things whose existence and non-existence is known according to how the things are" and

to say "the existent things and the non-existent things." That is because if knowledge is the perception of the realities of the existents insofar as they are existents, and this is a form in the soul of the knower, and if how the existent thing exists while it exists is the form of existence [in the soul of the knower], then the statement that [the thing] is known is equivalent to the statement that it exists. It is thus impossible for everything which is correctly described as existent to not exist. It is likewise with non-existence, since the way that non-existent things are is that they are non-existent. This is why they can be either called "known as they are" or they can be called "non-existent" because the way in which they are is that they are non-existent. It is for this reason that the possibility of existence cannot be truthfully predicated of it and that is because the non-existent thing's existence is impossible since it is not the same thing to say that "the thing's existence is contingent" and to say that "the thing is non-existent, but possible of existence." This is because if non-existence is correctly predicated of the thing, then its existence is impossible.

Those who claim the necessity of Zayd's walking [tomorrow] must also be advised regarding the premise which holds that the way which all things are is antecedently known. [They must be notified] that [this premise] treats as one [*ajmala*, 77.13] by its use of the term "knowledge" a very large number of facts.

That is because the accidents of Zayd, who is [just] one of many things, are uncountably many; indeed if we were to say that they may be infinite the truth would not be far off. How many are the accidents of all things, then? When one faces a question, one must treat each single concept [in the question] meaning with another singular meaning [in the answer].

If they were to specify and say that foreknowledge encompasses the existing and non-existing nature of the state of Zayd's walking tomorrow, we would advise them that this statement also implies various meanings. That is because the knowledge of Zayd's walking tomorrow will be understood differently if "tomorrow" is understood as a time for the walking than if "tomorrow" is understood as a time for the knowledge. That is because the concepts of things [when] abstracted are not the same as the concepts of things [when they are] described, even if the facts about all [the things] were previously known.

[78] The [correct] way [to deal with] a question which includes various meanings is that [the various meanings] not all be responded to with one meaning but that each one of the meanings be [respectively] individualized as one [independent] question. With this, let us point to the fact that the term "knowledge" here treats as one a large number of facts. That is because the knowledge of the state of Zayd's walking tomorrow, if [tomorrow] is understood as the time of the walking and not the knowledge, is not one thing but many things whose number is equal to the number of facts about the state of Zayd's walking tomorrow with respect to being and non-being. Thus the knowledge before tomorrow of Zayd's walking tomorrow is not the same as the knowledge on tomorrow [of Zayd's walking] nor [is it the same as the knowledge] after the occurrence of tomorrow. The truth of this statement becomes apparent through the fact that the status of Zayd's walking tomorrow with respect to its existence or non-existence before tomorrow is necessary of existence and impossible of non-existence, or it is necessary of non-existence and impossible of existence; each one of these concepts is different than the other.

We have demonstrated that the number of facts is equal to the number of knowable things. Thus the knowledge of the states of Zayd's walking tomorrow is not one piece of knowledge but rather a large number of facts. It is for this reason that one ought not to offer one answer for more than one of these [facts] even if it is true for all of them that [the knowledge of them] is prior. Thus if the question is specified to one fact within this knowledge, and the truth about it is sought, then the answerer will not make a mistake nor will it be possible the questioner to mislead [the answerer].

So this is the extent of what we say with respect to the confusion present for those who examine this subject with respect to this proof, which is the strongest proof we know from the proofs of the opponents of the truth.

Chapter 6

On the establishment of the true belief about [the contingent]; it is divided into two parts. The first part concerns the intended purpose of this treatise and it is the demonstration of the existence of the reality of the contingent and that [79] there exist contingent things among the things which exist. It is now time for us to clarify the truth about it and that is that there is among the existent things that which is contingent.

We say that it is most appropriate that one begin the inquiry about the being or non-being of a thing with an outline [*talkhīṣ*, 79.3] of what its name refers to. If this is done and then followed up by an examination of [existing] things [*taṣaffuḥ al-umūr*, 79.4] then the investigation about it is complete. If its concept is found among the [existing] things, then its affirmation is necessitated; and if its concept is not found among the things, then its denial and the affirmation of its non-existence are necessitated. We thus proceed in this way in our present inquiry which is: does the contingent exist? We say that we call contingent that which is neither necessary of existence nor necessary of non-existence. Since we have mentioned in this definition the necessarily existent and the necessarily non-existent, we will explain what we mean by each one of them. We say that the necessarily existent is that whose existence is perpetual [*dā'im*, 79.9] and does not ever not exist. The necessarily non-existent is that whose non-existence is perpetual and does not ever exist. Since the contingent is that which is not necessary of existence and the necessary of existence is that which is perpetual in existence, it follows that the contingent is that which is not perpetual in existence. And since in addition to not being necessary of existence, [the contingent] is also not necessary of non-existence, and the necessary of non-existence is that which is perpetual in non-existence, it is necessary that the contingent be that which is not perpetual in non-existence.

So combining what has been demonstrated from these two syllogisms about the contingent, [we say that] it is that which is not perpetual in existence and [also] not perpetual in non-existence.

This is the description of the contingent, and we have outlined it, so may our investigation come to completion through a careful examination of [existent] things. If we find among them that which is neither perpetual in existence nor perpetual in non-existence, then we have found that which we seek and we have attained our goal.

So we say that walking in humans, for example, is not perpetual in existence since there is [at least one] non-walking human. This is something that cannot be warned of since it is of the utmost clarity. Furthermore, [walking in humans] is not perpetual in non-existence since there exists [at least one] walking human and this too is of the utmost clarity like what preceded. We have thus found that the walking of humans is neither perpetual in existence nor perpetual in

non-existence, and all that which is neither perpetual in existence nor perpetual in non-existence is contingent, hence [80] the walking of humans is contingent. We have thus attained that which we have sought and we have verified the verification of our doctrine with the support of God and the best of His providence.

The second section regarding the thorough examination [*ishbā' al-faḥṣ*, 80.3] of the concept and the demonstration of truth about that over which the ancient philosophers have disagreed, restricted to [*maqṣūr 'alayh*, 80.7] the topic of the contingent. We like to conclude this argument by adding to it a clarification of what Aristotle focused on in his examination of this concept in the second of his logical books, namely *On Interpretation*, known as *Bārī Armāniyās*. Aristotle discussed the question about which the ancients disagreed, namely and the particulars in the future time: are they contingent or are they all necessary? We relate the philosopher Aristotle's discussion of the argument of those who reject the contingent and his invalidation of their argument, as well his proof of the existence of the contingent, such that there remain no confusion which is untreated, nor any covering which is left uncovered, nor any falsity which is not corrected, nor any truth which is not clarified.

So we say that it is clear and non-controversial that the concept of the definition of every species be present in every one of its particulars. For example, the concept of the definition of human, which is a species, and [which consists in] our statement that [something is] alive, rational, and mortal, is present in each one of its particulars such as Zayd and 'Amr. Therefore the meaning of any definition which is not separable from the nature of some species is present in every one of its particulars, just as the concept of the definition of laughter, which is a capacity to produce a natural sound which indicates the incidence of happiness in the soul, is not separate from the definition of "human": it is present in every one of the particulars of "human" such as Zayd and 'Amr.

There is no mystery that the walking of "human" is a species for Zayd's walking, for example. It must be known that I use Zayd's walking tomorrow as a placeholder for anyone's walking in any future time. It has been demonstrated that the meaning of the definition of the contingent is not separable from the nature of "human's" walking. It thus follows from this that the meaning of the definition of the contingent exist in Zayd's walking tomorrow, by analogy

with this account of it [*bi-qiyās hādhihi ḥikāyatuhu*, 80.21]. [81] The contingent is not separable from the nature of "human's" walking, and all that is not separable from the nature of "human's"walking is present in the nature of Zayd's walking tomorrow. [The contingent] is thus present in the nature of Zayd's walking tomorrow.

This premise, which states that everything that is not separable from the nature of "human's" walking be present in Zayd's walking tomorrow, is demonstrated by an anology with this account of it. All that which is not separable from the nature of a species is present in the nature of each one of its individuals [*ashkhāṣihi*, 81.5]. It is clear and not in need of demonstration that Zayd's walking is an individual [instance] of "human's" walking. And if this method is closely [applied to] the individuals of all species, then the existence of the contingency of that which is contingent in the nature of its species will be demonstrated.

[Chapter 7]

An exact account of Aristotle's argument regarding the proof of the deniers of the contingent, taken from the necessary truth of one member of a contradictory pair and the falsity of the other, [a careful account] of his proofs for the existence [of the contingent], and [of] his pointers regarding the locations of error in [the opponents' proof]. [The chapter] is divided into two parts.

[Part 1]

A careful account of Aristotle's argument regarding the proof of the deniers of [the contingent] as it is without any subtraction or addition.[296]

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[86.3]

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[296] 81.15 - 86.3 is a transcription of the Arabic Aristotle's *De Interpretatione* IX which is identical to the one found in Badāwī's edition (*Manṭiq Arisṭū*, 99-133. Dār al-Qalam: Kuwait, 1980, 109-112). We for-go translating it here since Zimmerman (*Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, 75-91) already provides a reliable English translation of al-Fārābī's lemma of *De Interpretatione* IX. When Yaḥyā cites the Arabic Aristotle, we have defaulted to Zimmerman's translation, since Yaḥyā's lemma overlap with al-Fārābī's.

The second part, on the explanation of Aristotle's arguments which we have carefully recounted, and on their examination according to the meanings which he uses in his argumentation. It is divided into three parts.

The first part, on the explanation of his discussion of the proofs of the deniers of the contingent. We say that his statement "now" refers to any present time, and his statement "in the past refers to any past time. And his statement "affirmation or negation" refers to opposite affirmations and negations liked our statement "every human is alive," and "not every human is alive," or our statement "No one is a stone" and "someone is a stone," or "Every human writes" and "not every human writes" and "Zayd is alive" and "Zayd is not alive." [297]

We have only said "opposite" in order to differentiate between opposites and contraries, and they are like our statement "Every human is alive" and "no human is alive" and "every human is a stone" and "no human is a stone" and "every human writes" and "no human writes." Opposites are never false together nor are they ever true together. But as for contraries, they are never true together but they can both be false. This is insofar as our statement "every human writes" and "no human writes" can be false together.

[We also made this distinction] in order to distinguish between these and indefinite pairs. They are like our statement "Humans write" and "Humans do not write." They can be true together, but they are never both false together. It is the same with particular pairs, like our statements "At least one person writes" and "At least one person does not write." [We also made this distinction to distinguish] statement pairs which are not contradictory. Is not required at all in these sorts of [pairs of] statements that the truth of one statement necessitates the falseness of the other.

It should also be known that by "*ījāb*" we mean "affirmation" and by "*salb*" we mean "negation."

[87] He means by "the affirmation or the negation is either true or false" that it is necessary that either the affirmation or a negation of a [member of an opposite pair], whichever is chosen, be confined to truth and not falsity, or to falsity without truth. Thus universal necessary affirmations, like "Every human is animal," is limited to truth and cannot be false, and

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[297] 18a28-33

its negation is limited to falseness and it cannot be true. [298] This is the case for impossible [universal affirmations] like "Every human is stone" as well as for contingent [universal affirmations]. Universal impossible negations, like "no one is stone," which is limited to truth, but [impossible and necessary universal affirmations] are limited to falsity.

He means by "Similarly about individuals," that there is no dispute over the fact that the affirmation and negation of opposite statements whose subject, and if you wish you may say "what is predicated with the two [i.e. affirmation or negation] is a universal, such as human: and [that] the term "every" or the term "no" is added [to the first subject of the opposite pair], and to the other [subject of the opposite pair] the term "not all" or the the term "[at least] one," — [and over the fact that] the affirmation and negation of such contradictories is such that if one is true then the other is always false.[299] It is the same with the affirmations and negations of contradictories whose subject is individual: when one of them is false the other is always true.

By his statement "but with particular referents," [he means] particular things like Zayd's walking tomorrow. By [88] "it is not like this" [he means] that these are not like others with respect to the necessary division of truth and falsity that we mentioned above or with respect to the [non-necessary division of truth and falsity] in statements whose subjects are individual and whose time is future. [300]

He followed this up with a proof of one of the two groups of people who oppose this, namely the affirmation of the necessity of existing and future things.

He said "For if every affirmation or negation is either true or false."[301] He means if every affirmation had to be true or false, and likewise every negation had to be [also true or false]. His statement "One of them must obviously be speaking the truth" is completed by saying "and the other [be obviously] speaking falsely." [In] his statement "if every affirmation were either true or false," he left out that if one is true then its companion [statement] is false, and if the companion [statement] is false, then it [i.e. the other companion statement] is true.

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[298] 18a30-2
[299] 18a30-1
[300] 18a33
[301] 18a34-5

He referred to that which he left out by his statement "For it is not possible that both alternatives should be together."[302] By this he means that either it is impossible that truth and falsity apply simultaneously to the affirmation and the negation, or that it is impossible that the affirmation or negation be true and false simultaneously. It must be known that in our [present] discussion we only mean opposite affirmation and negation, not anything other than them. He means by "in this" the two opposites, and by "and similar cases" he means that which is like opposing statements in the division of truth and falseness, namely necessary and impossible universal affirmations and negations like "every human is alive" and "no one is alive." This is because they resemble opposites in their division of truth and falseness.

By "For if in saying of a thing that it is white or not white," he means that if the statement "[it is] not white" is true then it follows that the thing itself be not white. [303] [89] By "if the thing is either white or not white, as the case may be, our affirmation or the negation of it has been true; if it is not then [it] has been false" he means that if the thing is white, then the statement "it is white" has been true, and if it is not white then the statement "it is white" has been false, and if the thing was something other than white then the statement "it is other than white" has been true and if it is not something other than white then the statement "it is something other than white" has been false.[304]

His statement "if it is false, then it is not" is the counterpart of "if it is "true, then this necessary entails that it be white or not white."[305] His meaning in "if it is false, then it is not" is that if the statement "it is white" is false, then the thing is not white. And if the statement "it is something other than white" is false, then the [thing] is not something other than white. His statement "thus an affirmation or negation must of necessity be either true or false" is the conclusion of his argument.[306] Its meaning is that it is necessary that the affirmation be either true or false, and that the negation be either true or false. His statement "hence nothing coming to be or existing which will be by coincidence or by one, whichever it may be, of two alternatives which are inevitable for a thing. Nor is anything going to be or not to be in this manner," of

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[302] 18a38-9
[303] 18a39-41
[304] 18a41-43
[305] 18a42
[306] 18a42-43

contingency is the conclusion of whoever refutes the contingent on the grounds that what they have put forth requires them to [deny it].[307] He means that there is nothing which comes to be like Zayd's walking while he is walking nor grape juice while it is being turned to wine, nor nothing which is like how [some existing] wine is, [i.e.] according to chance or coincidence.[308] Things which happen according to coincidence are two types. The first of them is that whose existence is by coincidence, like the coincidence that someone who digs a well finds a treasure, and like [the coincidence] of the existence of rain in the summer. The second type is that whose non-existence is coincidental, like the absence of cold in the winter. "Or by whichever it may be of two alternatives which are inevitable for a thing" means "according to the existence or non-existence of whatever thing. "Whichever it may be" means "the existence or the non-existence of the thing," whichever is the case; neither of one them is preferred over the other. This is like the walking of Zayd tomorrow, since its existence is not [90] preferred over its non-existence nor is its existence preferred over its non-existence. "Nor is anything going to be or not to be in this manner," namely in the two types of contingency which we mentioned.[309] His statement "but everything is necessary and nothing will be such that either of two alternatives may happen" is another way of saying "everything is necessary and nothing coming to be or existing will be such that either of two alternatives may happen."[310] This is different than what the deniers of contingency believe is proven [to be true] based on what they put forth, namely that there is nothing which is contingent. But they do not demonstrate this.

Thus he said "For the affirmation or negation about something is true."[311] Their syllogism for this is as follows: everything for which the [either] affirmation or negation is true is necessary, and [either] the affirmation or negation is true for all things, thus all things are necessary. When he put forth this syllogism which we mentioned, the goal [of the deniers of contingency"] becomes clear. It is by means of contradiction of a syllogism, applied to one of [the syllogism's] premises, which is the opposite of the sought after conclusion. It is that "If this

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[307] 18b2-6
[308] *Nudra*, 89.17
[309] 18b6
[310] 18b6-8
[311] 18b7-8

were not so, it would be the same for something to be and to not be.[312] What this means is that if things "were not so," i.e., necessary, "then it would be the same for something to be and to not be," i.e. the relation of their existence to their subject would be the same as their non-existence to it. This is because that is the case only for contingent things. As for necessary things, the relation of their existence to their subjects is not the same as the relation of their non-existence to [their subjects]. This is because their existence is inseparable from them and it is impossible that non-existence apply to them. It is the same for impossible things and that is because their non-existence is inseparable from [their subjects] and existence cannot apply to them. It is only in contingent things that the relation of their existence to their subjects is like the relation of their non-existence to it. This is because just as existence applies to their subjects, non-existence applies too. He refrained [from commenting on] the other premise which holds that everything whose "existence and non-existence is the same" is not necessary. He concludes from this that [some] things are not [91] necessary. This is the opposite of what they take to be the conclusion which their first syllogism required them to accept. Thus if their conclusion is true then its opposite is false. [By] "For a thing which is said to be such that either of two alternatives may happen is not one of the two alternatives rather than the other," he means by two alternatives existence or non-existence, whichever of the two happens to occur for the thing. He means by "nor will it become so" that for the thing, which is described according to what he said [that it could or could not occur], it is not the case that its existence or its non-existence be preferred over the other.[313] He only made this statement in order to clarify the premise which states that for non-necessary things then "it would be the same for something to be and to not be." Thus he presented one of the premises of the syllogism, namely this one [that for non-necessary things their existence and non-existence is the same] and he withheld the other which holds that for everything for which one of the two possibilities [existence or non-existence] is not preferred over the other "it would be the same for [it] to be and to not be." It follows then from this that non-necessary things "it would be the same for [them] to be and to not be."

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[312] 18b8-9
[313] 18b9-10

His statement that "Furthermore, if something is white" and everything which follows until "For if something is by coincidence, its coming to be is not necessary" does not require explanation due to its clarity, except "the said thing cannot not exist or not come to exist."[314] It is possible that this distress his reader, since [the reader] might think that "not come to exist" refers back to "the said thing cannot not exist," but it only refers back to "not exist." He means that [the thing] cannot not exist, nor can it come to not exist. The overall point of this statement is a syllogism in the following way: for everything which is now white, the statement that it is going to be white before its being [white] is always true. It must be known that "white" here takes the place of everything which is in the present time, and that he uses everything which exists in the present time in the place of everything which is about to exist. Thus his statement "everything which is white" comes to mean everything which is going to be [white]. [92] And since the statement about anything before it becomes white that it will become white is always true, it is thus impossible that it not be [white] nor that it not become [white]. It follows from this that it is impossible for everything which is now white to be not [white], nor that it become not [white].

He then adds to this conclusion another premise which holds that "If it is impossible for a thing not to come to exist, it must of necessity come to be.[315] He follows this premise with the conclusion that "Everything, then, whose existence is impending must of necessity come to be."[316] He made this conclusion a premise and [another] conclusions follows from it, namely that "Nothing, then, will be such that either of two alternatives may happen, nor will it be by coincidence."[317] He concludes this with the premise with which he finishes his discussion of this proof and he extracts it as a rationale for "For if something is by coincidence, its coming to be is not necessary."[318] He sets up his syllogism in the following way: everything which exists via coincidence is not necessary in its existence, everything which is coming to exist must exist; therefore nothing which is coming to exist is according to whichever of the two alternatives is [possible for a thing], nor [is its coming to be] via coincidence. This is the end of the second proof, used to refute contingency and affirm necessity.

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[314] 18b10-16
[315] 18b13-14
[316] 18b14-5
[317] 18b15
[318] 18b15-6

His statement "Nor can we say that it is not, not one of the two sentences, right" and what follows this until "the negation, though false, has as its counterpart a negation which is not true," is clear and its meaning does not need explanation.[319] His goal here is to clarify that the argument of the opponents— that since every affirmation and negation are opposites, it is necessary that one of them be true and the other be false, by virtue of taking one of the two parts [or] its opposite in the place of both of them together. I mean by "the two parts" the two senses [*maʿnāyayn*, 92.18], that if one of them is false then the other is necessarily true. This is because if it is not true that for opposites one of them is true and the other false, then certainly they must both be true together or [they must be both false] together. He thus examined this last division to demonstrate its falsity.

[93] He did not mention [the refutation of the first division] since the manner of refutation is exactly the same for both of them. His refutation of it is by means of contradiction [*bi-ṭarīq al-khalf*, 93.1-2]. This is because he arrived to an impossibility, namely that "the affirmation, though false, has as its counterpart a negation which is not true."[320] He took this to be impossible without demonstration since it is [understood] in a primary sense within the mind and impossibilities are among those things which cannot be made clearer. His goal was not to demonstrate this, namely that two opposites be false, since it is the impossibility of the subject at hand. It is like the impossibility of what he demonstrates, namely the clear impossibility that that whose opposite is not true be false. Rather he only mentioned it in order to further confirm the first part which is [proved to be] true through illustrating the impossibility of the other part. His demonstration has a second purpose. It is the statement which follows: "Moreover, if it is true to assert of something that it is white and that it is black," and everything which follows this until the end of his statement "it is not such that either of the two alternatives may happen."[321] This is a second goal of this statement; he demonstrates that even if it is granted that each one of the divisions of the statement that every opposite affirmation and negation is such that one of them is true and the other is false, it still follows that all things are necessary, and there is nothing that

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[319] 18b19-20; see Zimmerman (*Al-Farabi's Commentary and Short Treatise on Aristotle's De Interpretatione*, 81) for some explanation for the awkward phrasing here.
[320] 18b18-20
[321] 18b20-3

occurs by chance. In order to demonstrate this, he used the division which he left aside in the previous chapter and he used it in place of both divisions for the reason which we just mentioned regarding his use of the first false part in its place and in this place here. His intention is clear from his words. For this reason we forgo summarizing it.

His entire statement "an example of this is a battle, for it is necessary." Thus if someone said that the battle will occur tomorrow and the statement that it will not occur, are both false together, then it follows necessarily that he does not mean that the battle not be, since the affirmation is false, nor not occur since the negation is false, and [its] being in the other division is the opposite of this. This is because if the statement that the battle will occur tomorrow and the statement that it will not occur tomorrow are both true, then it follows, due to the truth of the affirmation, that it not not occur and, due to the truth of the negation, [it follows that] that it not occur, since the ensemble of these two statements is necessarily of the form of two true statement [pairs] via two false divisions according to how they are. It is necessary that the things to which these two statements refer must necessarily be how they are, [94] not by chance or coincidence. This is Aristotle's other proof [presented] on behalf of the deniers of contingent things. His discussion of the affirmation of the contingency follows.

The second part, on the affirmation of the contingent. Aristotle said "This and similar things are the absurdities that follow." Everything that follows this until "Therefore, we say now that the existence of a thing."[322] His statement "This and similar things are the absurdities that follow" and everything which follows this until his statement "and accordingly," — his statement "this" does not refer to what comes after it, but rather it only refers to what he demonstrates which is the section which we recounted.[323] The thing which he said was an absurdity was the elimination of deliberation concerning what we should do and what we should not do. This is because it is obvious that the elimination of deliberation and its utility clearly follows from the reason [discussed] above. [This] statement [concerning the elimination of deliberation] is extremely absurd and affirming it as a necessary thing is a manifest error. No one of sound intellect, even if it were weakened by distress which did not ravish it entirely, wonders

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[322] 19a26-7
[323] 18b31

whether he should rise up to the sky or not, nor whether he must occupy a space or not. This is because these two matters are necessary and they do not vary from how they already are. One of them is non-existent and its existence is impossible; this is his rising to the sky. The other is existent and its non-existence is impossible; this is the occupation of space. It happens that every sound-minded individual sometimes deliberates about whether he should set sail looking for riches or not, or whether he should purchase a parcel of land or not, [and] about whatever is like these. If the existence of all things were necessary, then he would be forced [to accept] the elimination of deliberation, and anything which entails the corruption of deliberation is impossible. Thus it is impossible that the existence of all things be necessary. His discussion in this chapter does not require explanation, and for this reason we abstain from [explaining it in detail]. We [will] rather mention his intended goal in each section. We thus say that the section which beings with "accordingly" and which ends with "if we do not do what is necessary, [then] what is necessary does not happen," he presents as entailing the necessary existence of all things.[324]

The section which begins with "there is nothing to prevent" and which ends with "one of the two alternatives of which it was then truly said" he uses to demonstrate the doing away of our need to deliberate about things [if they are] all necessary [95], and [his demonstration] is in the following way: the need to deliberate is only concerning that which if we do what we should, then it was what we should have done, and if we do not do what we should, then it was not what we should have done.[325] If all things are necessary, then there is nothing such that if we do what we should do regarding it, then it was what we should have done, and if we do not do what we should then, it was not what we should have done. It thus follows from this that if all things are necessary, then there we do not have a need for deliberation.

In the section beginning with "Nor does it make any difference in this connexion whether the contradiction is said or not" and ending with "after another time, whatever its extent" he demonstrates that neither the affirmation of a thing nor its negation are a cause of the existence

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[324] 18b32-3; see Zimmerman (ibid, 84) for a note on the ambiguous Arabic which reads "*in nafʿal mā yajibu, kāna mā yajibu, wa in lam nafʿal mā yajibu lam yakun mā yajibu*" (Badawi, Manṭiq Arisṭū 111.7-8).
[325] 18b35-6

or non-existence of the referent thing.[326] This is because if the cause of any given thing is eliminated then the thing itself no longer is, but each one of these [i.e. the affirmative or negative statement] may be eliminated without the elimination of the referred-to thing. Thus neither the affirmation or the negation is a cause of the existence nor non-existence of things.

The section starting with "So since in the whole of time its state is such that one of the two statements about it is true but not the other," until the statement "thus the statement regarding it that it was going to exist was always true," is one of the proofs of the deniers of the contingent which we mentioned and which he reduplicated in order to show that it entails an impossibility.[327] He invalidates it in this way.

The section starting with "but since all this is absurd" and ending with "this is how it is with such other things that come to be as are spoken in terms of this kind of potentiality" is a proof for the existence of contingent things by showing that the supposition of the elimination of deliberation entails an impossibility.[328] Its existence is something obvious that we should not need to demonstrate, by examining the existing things and finding in them things which we sometimes do and sometimes not do, and [we finding in them things] which are affected by some thing and others which are not. His statement in the beginning of the statement "since these things are impossible": by "these things" he refers to the elimination [96] of the need for deliberation, to affirmation and negation's being causes of the necessity of their referents, and to [the idea that] that all existing things are such that either the affirmative statement or the negative statement is true without [the truth of] the other.

The meaning of the end of his statement, namely "this kind of potentiality," refers to one of the two types of potentiality, which applies to a thing and its opposite. This type of potentiality is genuine contingency itself. He only [called them two types] in order to differentiate what comes to be via this type of potentiality from what comes to be from the other type of potentiality. This [other type of potentiality] is the potentiality for one of the opposites [in a contradictory pair] without the other, like the potentiality for fire to warm bodies that come

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[326] 18b36-19a1
[327] 19a1-2
[328] 19a7-19a17

close to it and that have a nature that accepts warmth. This type of potentiality does not include the potentiality to not warm that which it has the potentiality to warm.

[The section] which begins with "It is, then, manifest that not everything exists or comes to be of necessity," and which ends with "except that it is possible that the other alternative will be or that it will not be" [contains] the conclusions of his proofs through which he demonstrated his two goals.[329] The first is that the existence or the coming to be of all things is not necessary, and this is the opposite of what his opponents contend. The other is the correctness of his belief that "some things are such that either one of two alternatives may happen so that affirming them is no more likely to be true than negating them."[330] He means by this contingent things in which existence and non-existence are equivalent. This, in future things, occurs by volition. "Some things are such that either of two alternatives may happen" means that their being [or] their non-being is more likely and more frequent.[331] This is of two types: one of them is where [the thing's] being is more likely than non-being. This occurs in things whose cause is nature, such as humans' having of five fingers. The other type is where [the thing's] non-being is more likely than its being. This occurs in things whose cause is chance, like humans' having six fingers. This completes part two.

Part three on revealing the locations of error in the proofs of the deniers of the contingent. Aristotle said "Therefore, we now say that the existence of something when it exists is necessary," and everything that follows until the end of his discussion is about this concept which we carefully related.[332] His discussion here focuses on demonstrating that the opponents err due to their belief that there is no difference between the existential status of a thing when it exists and the existential status of a thing taken absolutely, and due to their considering the truth of statements as a necessitating cause of the existence or non-existence of things. His discussion is clear and does not require a synopsis. To God [we give our] thanks. We have carefully investigated the discussion about our goal by means of the support of God, One of munificence and wisdom, possessor of justice and giver of intellect.

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[329] 19a18-19a21; we depart here from Zimmerman"s translation. The Arabic reads "*illā innahu qad yumkinu an yakūna al-amr al-ākhar wa-lā yakūnu dhālika*" (Badawi, ibid, 112.8-9).
[330] 19a22-3
[331] 19a19-20
[332] 19a23-24