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**Transliteration Table**  
(as adopted in the *Encyclopaedia of Islam*)

|               |               |           |           |
|---------------|---------------|-----------|-----------|
| أ - a         | آ - ā         | ع - 'ē    | و - w / ū |
| ب - b         | ض - ḍ         | ي - y / ī |           |
| ت - t         | ط - ṭ         |           |           |
| ث - <u>th</u> | ظ - ṣ         |           |           |
| ج - <u>dj</u> | ع - 'ē        |           |           |
| ح - ḥ         | غ - <u>gh</u> |           |           |
| خ - <u>kh</u> | ف - f         |           |           |
| د - d         | ق - q         |           |           |
| ذ - <u>dh</u> | ك - k         |           |           |
| ر - r         | ل - l         |           |           |
| ز - z         | م - m         |           |           |
| س - s         | ن - n         |           |           |
| ش - <u>sh</u> | ه - h         |           |           |

*Ta marbuṭah* is rendered by *ah* in a pause form, in *statu constructo* it is rendered by *at*.  
*Fathah*, *kasrah* and *ḍammah* are rendered by *a*, *i*, *u* respectively.

NB. When not underlined, *th* stand for two separate letters, ت and ه, as in *bāsharath* (p. 19).

## Abstract

The present work deals with establishing of the exact meaning of the technical terms used by al-Kindī in the longest of his extant philosophical treatises, *The Letter on the First Philosophy*. On many occasions, however, when the meaning of a term appeared to be obscure in the *Letter*, the evidence of al-Kindī's usage of such a term has had to be brought forward from his other philosophical works in order to elucidate its meaning as accurately as possible.

Much attention has been paid to the original significance of the terms that are al-Kindī's translation of Aristotle's philosophical vocabulary. In some instances, when the difference between the Aristotelian usage and that of al-Kindī appeared to be crucial (as for example, in case of the terms ἡ κοινὴ αἴσθησις (the common sense), and *al-hiss al-kullī* (the universal sense), both usages have been given in a detailed exposition.

Whenever helpful to clarify the meaning of the terms, the definitions of philosophical terms given by al-Tahānawī in the *Kashshāf*, have been included with the definitions proper to al-Kindī.

Most of the philosophical terms have been analyzed in their proper philosophical contexts, which allows not only elucidating more distinctly their meanings but also delineating the main themes of al-Kindī's philosophy.

## Résumé

Ce mémoire est consacré à la définition des termes techniques utilisés par al-Kindī dans la plus longue de ses oeuvres philosophiques, *La lettre sur la Première Philosophie*. Néanmoins, les termes dont la signification n'est pas claire dans la *Lettre*, sont expliqués à partir de leur usage dans les autres traités d'al-Kindī.

Beaucoup d'attention a été accordée aux sens originaux des termes qui sont la traduction d'al-Kindi de la terminologie philosophique d'Aristote. Dans certains cas où la différence entre l'usage d'Aristote et celui d'al-Kindi était cruciale (comme, par exemple, en cas des termes ἡ κοινὴ αἴσθησις (le sens commun) et *al-ḥiss al-kullī* (le sens universel), tous les deux sont donnés dans un exposé détaillé.

Dans des cas discutables, les définitions des termes philosophiques, donnés par al-Tahānawī dans le *Kashshāf*, sont ajoutées aux définitions propres à al-Kindi.

La plupart des termes philosophiques sont analysés dans leurs propres contextes, ce qui permet non seulement de définir leurs significations plus nettement, mais aussi de signaler les thèmes principaux de la philosophie d'al-Kindi.

## Part I

### The Contextual analysis of *The Letter on the First Philosophy*

The precise meaning of most of the technical terms in the *Letter* can be established only through the context in which they occur. On the one hand, this is the case with the terms al-Kindī uses synonymously for notions that are translated into English by the same word. On the other hand, the same Arabic term can be used as a homonym and have a completely different meaning in different contexts. The terms *ḍjism* and *ḍjirm*, which designate the notion of body, are a good example of this kind of synonymy. They have different connotations that can be grasped only through their contexts. Thus, the term *ḍjism* is used mostly in a mathematical or physical context. When al-Kindī draws a distinction between point, line, surface and body he uses the term *ḍjism* to denote the mathematical body. However, when he speaks about body in its metaphysical or ontological sense he uses the term *ḍjirm*. The body of the universe would be for him *ḍjirm al-kull*. *Kull*, in its turn, is a homonym. In a mathematical context, or when al-Kindī speaks about the predicates, it means *all*, synonymous to *whole*, *ḍjamī*’, but when used in a discussion of an ontological issue it means the universe. Thus, if taken without its proper context, *ḍjirm al-kull* can be understood completely erroneously.

It should be noted however, that al-Kindī is quite often inconsistent in his choice of the terms for a particular issue, and *ḍjirm* can happen in a mathematical context as well instead of a more common *ḍjism*. This inconsistency of the technical vocabulary is mainly due to his difficult style, which is in some places highly convoluted and of obscuring brevity. Nonetheless, the repetitiveness and redundancy of other passages

redeem, so to speak, these stylistic drawbacks, and the general tendency in the usage of the terminology can still be traced. Another feature of al-Kindī's writings, which is of great help in view of his abbreviated style, is the fact that the majority of his treatises complement each other, and an issue that is vaguely mentioned in one work may come to be sufficiently clarified in another one. Since the text of *The Letter on the First Philosophy* is only partially available to us, and, in any case it is all too brief in the discussion of many important questions, I thought it necessary, when need was felt, to bring evidence from several other philosophical treatises of al-Kindī in order to elucidate his terminology sufficiently.

The following principal contexts can be singled out: Philosophy, to which mainly the first chapter, *fann*, of the *Letter* is dedicated; Epistemology, with which al-Kindī deals in the second chapter; Mathematics, which immediately follows Epistemology in the second chapter; Predicates, which are treated by him at length in the third chapter; and Unity, which summarizes and concludes the foregoing argumentation in the fourth chapter. No separate chapter is assigned to Ontology in the existing text of the *Letter*, but ontological issues occur *passim* in all the chapters. In my opinion, the most expedient way would be to analyze the contexts in the order al-Kindī puts them. And, though he is far from being systematic in this respect, and on many occasions the contexts overlap each other, even so, I think that following the general sequence of the themes will make it possible to trace more easily the development of his thought from the beginning to the end of the treatise.

## The Context of Philosophy

The *Letter* starts with an explanation of the nature of philosophy, as was traditional in late Hellenistic philosophical treatises.<sup>1</sup> Al-Kindī, who was evidently acquainted with some of the Greek sources on the subject, combines several definitions of philosophy found in late Hellenistic philosophical works into one extended definition. He does this in a very selective way; emphasizing some characteristics of philosophy as they were understood by the Greeks, while downplaying others. First, and this is the most important point for al-Kindī, philosophy is knowledge (*ma 'rifah*) or craft (*ṣinā 'ah*) about the Truth (*al-ḥaqq*).

By the Truth here al-Kindī means God. He never says it directly, although it may be surmised even in the beginning of the treatise from the fact that in Islam *al-ḥaqq* is one of the attributes of Allah. This becomes clearer toward the end of the *Letter* where he speaks about the True One (*al-wāhid al-ḥaqq*). The treatise thus starts and ends with the same theme, the nature of God, which allows us to regard it, despite its incompleteness, as an integral whole.

The Truth, God, is understood by al-Kindī in his definition of philosophy not in an epistemological or theological sense, as would be the case with the Mu'tazila<sup>2</sup>, but ontologically and causally. For al-Kindī, God's being and causing the existence of all things are His principal attributes. This brings him from the outset of the *Letter* into the framework of the Aristotelian philosophical paradigm, which he observes rather steadily throughout the treatise. Thus, he sounds like a true Peripatetic when he declares that since the Truth exists necessarily (*iḍtirāran*) the (individual) beings (*al-inniyāt*) exist. This statement, in which the existence of God/The Truth is assumed to be the cause of the

existence of all things, recalls the assertion of Aristotle in his *Metaphysics*: “ὅτι ἕκαστον ὡς ἔχει τοῦ εἶναι, οὕτω καὶ τῆς ἀληθείας” (“so that as each thing participates in being, so it does in truth”)<sup>3</sup>. Nevertheless, it is questionable whether al-Kindī here paraphrases Aristotle from the *Metaphysics* or is quoting Plotinus from a passage of the *Uthūlūdjiyā*, where God the Creator (*al-bārī*) is described as the First True Essence (*al-ānīyah al-ūlā al-ḥaqq*) the cause of both intelligible beings (*āniyāt ‘aqlīyah*) and those which are perceived with the help of the senses (*ḥissiyah*)<sup>4</sup>. In the latter case there would be a shift of significance which would lead to the neo-Platonic concept of emanation. To my mind, the extant text of the *Letter on the First Philosophy* does not give sufficient ground for such a suggestion, since nowhere is the notion of *fayḍ*, emanation, mentioned in the philosophical context. Al-Kindī speaks about the emanation of the unity from the True One at the very end of the *Letter*. It should be noted, however, that in his treatise *On the Explanation of the Active Proximate Cause of Generation and Corruption*, al-Kindī does refer to God as *al-innīyat al-ḥaqq* that never becomes *laysa*, nothingness<sup>5</sup>. Even if it can be concluded from this reference that he was acquainted with the *Uthūlūdjiyā* and borrowed from it a somewhat neo-Platonic attitude towards the understanding of philosophy, still in his definition of philosophy in the *Letter* (based chiefly on the Peripatetic concept of being *qua* being), al-Kindī remains mainly Aristotelian. This suggestion is further corroborated by other similarities between him and the Stagerite. In the next passage Aristotle indirectly equates being(s) and truth, to which al-Kindī alludes in his definition of philosophy: “δεῖ τὰς τῶν αἰὲν ὄντων ἀρχὰς ἀναγκαῖον αἰὲν εἶναι

ἀληθεστάτας” (“so necessarily, the principles of eternal beings necessarily must be always the most true”)<sup>6</sup>.

One more parallel of the being-truth relation can be traced in the following passages of al-Kindī and Aristotle. As the True One for al-Kindī is the only cause of the existence and the unity of created things, which participate in (true) unity only metaphorically, *bi’l-madīāz*, so too for Aristotle the existence of what is the most true is the reason why the other things are derivatively true: “ἀληθέστατον τὸ τοῖς ὑστέροις αἴτιον τοῦ ἀληθέσιν εἶναι”<sup>7</sup>. There is, nonetheless, a very substantial difference between him and Aristotle. Generally speaking, *al-wāhid al-ḥaqq* of al-Kindī corresponds to Aristotle’s τὸ ἀλησθέτατον, the Truest One. But in the *Metaphysics* the Truest One is not absolutely one, but rather, It is the eternal principles which cause the other kinds of existence but which for their own existence do not require any exterior cause : “οὐδέ ἐκείναις αἴτιον τι ἐστὶ τοῦ εἶναι, ἀλλ’ ἐκείνας τοῖς ἄλλοις”<sup>8</sup> (“for these principles there is no cause of being, but they are the cause of being for others”). Needless to say, such a postulation of the multiplicity of the ultimate cause would be unacceptable for al-Kindī and in fact his whole treatise is directed against it. That is why he renders this line from the *Metaphysics*, probably through Asṭāt’s (Eustathius, a Syriac Christian, *dit* Asṭāt or Uṣṭāth, translator for al-Kindī, end of VIIIc.- first half of IXc.) translation, as follows: “*wa ‘illat wudjūd kull shay’ wa thabātuh al-ḥaqq*” (the cause of the existence and endurance of everything is The (one) Truth), translating τὰς ἀρχάς by *al-ḥaqq*.

The definition of philosophy from the ontological/causal point of view is given alongside the definition of philosophy from the point of view of its goal (*gharad*). This goal is twofold: the achievement of the truth, *iṣābat al-ḥaqq*, through science, *ʿilm*; and the action, *ʿamal*, acting according to the truth in practice.

In the *Letter* al-Kindī does not dwell in detail upon what he means exactly by achieving the truth and acting according to the truth, and this part of the definition of philosophy remains unexpounded. But in his other treatise, *On Definitions*, he adds another meaning to the definition of philosophy found in the *Letter*: philosophy is similitude (*tashabbuh*) to God through actions (*afʿāl*)<sup>9</sup>. One may suppose, as A. Ivry did<sup>10</sup>, that here al-Kindī hints at a neo-Platonic theme of the unity of an individual soul with God, which is attained as a result of becoming similar not to God *per se*, but to God's actions (ἐνέργειαι) and power (δύναμεις). Hence the term *afʿāl* in al-Kindī's definition. A. Ivry is right, I think, in that this definition, called in late Hellenistic sources the teleological definition of philosophy and whose origin goes back to Plato's *Theaetetus*<sup>11</sup>, was borrowed by al-Kindī from some Alexandrian source. What he misunderstood, in my opinion, is that the purpose of al-Kindī's quoting this definition in his treatise *On Definitions* and briefly alluding to it in the *Letter on the First Philosophy* is not to bring a neo-Platonic flavour into his discussion, but rather to accentuate that the goal of philosophy, through the imitation of the actions of God, is virtue. Indeed, he concludes the definition as follows: "*arādū an yakūna 'l-insān kāmil al-faḍīlah*" ("they meant by this that man should be of perfect virtue")<sup>12</sup>. Al-Kindī was known for his writings on morality in the Middle Ages; indeed, he wrote several treatises on this subject and was the alleged

author of a great number of popular maxims of moral character<sup>13</sup>. Moreover, philosophy was viewed by many educated Muslims of that period<sup>14</sup> principally as wisdom, *hikmah*, akin to Greek σοφία, whose goal was self-improvement and ennoblement of the soul. In such an attitude towards philosophy, doubtlessly many Greek elements must be found, not only neo-Platonic but also Stoic and probably Pythagorean, since the notion of *hikmah*-σοφία itself is essentially foreign, at least in its origin, to Muslim thought. Consequently, by adopting the teleological definition, (neo)-Platonic by its source, as part of his definition of philosophy al-Kindī does not intend to change his philosophical paradigm (which remains predominantly Aristotelian all through the *Letter on the First Philosophy*) into a neo-Platonic one but just refers to an understanding of philosophy commonly accepted in his time. For this reason I also reject A. Ivry's suggestion that al-Kindī by the term *sarmadan* in the phrase with which he ends the teleological definition in the *Letter* (“لا الفعل سرمدًا”) (not acting endlessly) wanted to emphasize the absence of any permanent conjunction with God<sup>15</sup>. It would seem more plausible, to my mind, to explain it by the fact that al-Kindī, following John Philopponus (ca. 490-570), opposes any kind of infinity in actuality, a subject about which he speaks extensively in subsequent chapters.

In the *Letter*, al-Kindī defines philosophy exclusively as human knowledge. The knowledge of the true nature of things, *ʿilm al-ashyāʾ bi ḥaqāʾ ikihā*, which is one of the definitions of philosophy, is by no means omniscience but limited to the ability of man, *bi ḥadr ṭāqat al-insān*. This knowledge is attained through a cumulative process, generation after generation, because “in the time of one man, even if his life span is extended, and his research (*baḥṭh*) intensive...it is not possible to assemble as much as

has been assembled, by similar efforts over a period of time many times as long". This attitude, which F. Rosenthal calls "daring"<sup>16</sup>, is a disguised attack on the traditional view of knowledge as received by divine inspiration. Later in the chapter, al-Kindī equates human knowledge, the greatest embodiment of which is Aristotle (whom al-Kindī mentions by name) with the prophetic knowledge received from God.

One may even venture to suggest, in view of this "daring" attitude, that in the first chapter of the *Letter* al-Kindī tacitly gives preference to philosophy over prophecy, because the former has the advantage over the latter in that it uses an elaborate scientific apparatus (*ālāt mu'addiyah ilā al-ʿilm*) for its purposes. Its main constituents, as mentioned by al-Kindī, are the four types of scientific inquiries (*al-maṭālib al-ʿilmiyah*: "whether", *hal*; "what", *mā*; "which", *ay*; "why", *lima*), which correspond to the four Aristotelian causes (matter, *ʿunṣur*, form, *ṣūrah*, efficient cause (*fāʿil*) and final cause, (*mutammimah*); definition (*ḥadd*) based on the knowledge of the causes, and demonstrative proof (*ʿillah* or *burhān*). Moreover, philosophy has its own methodology that leads to verity. Al-Kindī does not mention in the *Letter* what can be contrasted from the part of prophetic knowledge with this scientific apparatus of philosophical research (*ṭalab*). The nature of prophecy is explicated in his treatise *On the Number of the Books of Aristotle*<sup>17</sup>. Prophetic knowledge (*al-ʿilm al-ilāhī*) as distinct from human knowledge, is obtained neither through research, nor effort (*takalluf*) nor mathematical cleverness (*ḥīlah bi'l-riyāḍiyyāt*), nor logic (*manṭiq*) proper to the human beings. It is acquired in no time by the will of God (*bi-irādatih*) by His purification of their (the prophets) souls (*bi-taḥīr anfusahum*) and by the illumination of their souls (*ināratihā*) through His help, His

guidance, His revelation and His messages (ورسلانه بتأييده وتسديده وإلهامه) so that their souls could be prepared for the acceptance of the truth (*al-ḥāḳḳ*). This knowledge is superior to human knowledge, it is the miraculous spiritual experience of the prophets (*khawālidjuhum al- 'adjībah*) and one of the signs (*āyātuhum*) granted to them and which raise them above other human beings (*dūna 'l-baṣhar*). This eulogy of prophecy allows R. Walzer to draw the conclusion that here “we find ourselves, quite unexpectedly, in non-Aristotelian surroundings”<sup>18</sup>, from which it follows that al-Kindī sides with the Mu'tazila. What R. Walzer does not mention in his article is that just a bit further in the treatise, al-Kindī starts speaking about the knowledge of the prophets in the same language he uses to speak about the knowledge of philosophers. He says, for example, that for human beings (with the exception of the prophets) there is no way to the understanding of the science of the secondary hidden substances (*al-djawāhir al-thawānī al-khaḫfiyah*) as well as to the science of the primary sensible substances (*al-djawāhir al-ūlā al-ḥissīyah*) and to what happens as an accident in them (*wa mā ya 'riḍ fīhā*). Somewhat later, he refers to God, using philosophical terminology, as *al-wāḥid al-ḥaḳḳ* who creates being from nothingness (*aysa min laysa*). It looks as if al-Kindī's prophets are perfect philosophers; the difference between them and the philosophers among human beings is that the Prophets have received their knowledge, which is purer but essentially the same, without any effort, from *al-wāḥid al-ḥaḳḳ*. They even apply this knowledge to the same scientific *quaesita* as the ordinary philosophers do. Prophetic knowledge has no scientific apparatus because it does not need it, and in this lies its main distinction and superiority in respect to philosophy. Taking this all into consideration, it is in my view premature to speak

about “non-Aristotelian surroundings”. Moreover, al-Kindī in the *Letter* attaches considerable importance to the elaboration of scientific methodology, and, *en passant*, after expounding the scientific apparatus of the philosophers mentions the research method of the theological investigation, *i.e.*, *naẓar*. Theology’s principal tools, as mentioned in the *Letter*, are opinion (*ray* ’), individual reasoning (*idjtihād*) and estimation (*ẓann*). Since he gives a very negative characteristic of the المتسمين بالنظر, who, as it may be guessed, are the Mu’tazila, often mentioned in the sources as *ahl al-naẓar*<sup>19</sup>, it may be deduced that al-Kindī does not hold their method in high esteem. In his treatise *On Definitions*, he dwells in some detail on several of the theologians’ research tools and contrasts them with the philosophical method. Thus, in the definition of *ma ’rifah*<sup>20</sup>, which is one of the significations of philosophy, he says that *ma ’rifah* is the opinion that does not cease (*al-ray ’ghair za ’il*) whereas opinion, (*ray* ’) is an apparent estimation (*al-ẓann al-zāhir*) in an oral or written form, or a conviction of the soul (*i ’tikād al-nafs*) in one of two contradictory things that can cease (*yumkin al-zawāl ’anh*)<sup>21</sup>. Further, in his definition of estimation, *al-ẓann*, al-Kindī contends that it lacks scientific precision, because it is a judgement of the apparent nature of the thing, not of its true nature (*al-ḡadā ’ ’alā al-shay ’ min al- zāhir...lā min al-ḥaḳīḳah*) and because it is an explanation without proofs or demonstration (*al-tabyīn min ghair dalā ’il wa burhān*)<sup>22</sup>. *Ma ’rifah*, on the other hand, derives its permanence from its accordance with the truth, and this truth can be explained through proofs and demonstration. Therefore, the importance of an

elaborated scientific apparatus is evident to al-Kindī, and he imputes a lack of it to the Mu'tazila.

Finally, al-Kindī incorporates into the first chapter of the *Letter* another Alexandrian definition of philosophy: called the definition of philosophy from pre-eminence<sup>23</sup>. This definition is closely connected with, and in fact follows from, the definition of philosophy from the ontological/causal point of view, as explained above. Philosophy is called *al-falsafah al-ūlā*, the first philosophy, not because it is the first in number but because its subject is the first cause (*al- 'illah al-ūlā*) of the rest of the things. Since the knowledge of the cause is nobler than the knowledge of the effect, the first philosophy is the noblest (*al-ashraf*) of the sciences.

At the end of the chapter, al-Kindī sums up his expounded definition of philosophy in the following way. 1) The first philosophy is the knowledge of the divine ( *'ilm al-rububīyah*) *i.e.*, the true theology, because it studies the true nature of things and because it investigates the first cause, which is one. That is why it is also the knowledge of unity ( *'ilm al-waḥdāniyah*). For this reason, it is the noblest of all sciences, as stated in the definition from pre-eminence. 2) The first philosophy is the knowledge of virtue ( *'ilm al-faḍīlah*) as was explained in the teleological definition. 3) The first philosophy is the complete knowledge of everything useful and the way to it (وجملة علم كل نافع والسبيل إليه)<sup>24</sup> for it is distinguished among all other speculative kinds of investigation due to its precise scientific apparatus.

Having viewed philosophy from all these sides, in the next chapter al-Kindī will narrow the field of his discussion and will look mainly into that branch of philosophy that deals with the process of cognition.

## 2

### The Context of Epistemology

In the *Letter* al-Kindī mentions three organs of cognition: the senses (*al-ḥawāss*), the soul (*al-nafs*) and the intellect (*al-ʿaql*); and two kinds of perception: sensory perception (*wudjūd al-ḥawāss*) and intellectual perception (*wudjūd al-ʿaql*). Each kind of perception has its own object of apprehension. For sensory perception, it is a material individual object (*al-maḥsūs*) which is in constant evanescence (*zawāl*) so that it is not permanent (*ghair thābit*) in nature. That is why al-Kindī says that it is far from nature, *i.e.*, it has no factual existence; but it is close to us, that is, it exists only when our senses apprehend it, (لوجدانه بالحس مع مباشرة الحس إليه) (JJ, p.19 lines 13-14). This material object is always a body and in a body (*djirm*). The objects of apprehension of the intellect are the Universals (*al-kulliyāt*) which lack matter. They are close to nature; *i.e.*, they have real existence. As for the soul, no kind of perception is allotted to her by al-Kindī, though he ascribes to her certain cognitive abilities. In addition, it is not very clear, at first sight at least, what the soul's object of apprehension may be. It is better, I think, to begin the explanation of al-Kindī's epistemological theory with the soul, because her role in the epistemological process seems to be problematic to him.

When a human being perceives a sensory object through the senses, its form, or image (*ṣūrah*) is first located in the imaginative power (*al-muṣawwir*) and then transmitted to

the memory (*al-hifẓ*) from whence it is conveyed to the soul. This image does not go further to the intellect, but is somehow rationalized by the soul. The rationalizing capacity of the soul is mentioned in *On Definitions*, where it is called “imagination” (*al-faṭāsīyā* or *tawahhum*)<sup>25</sup>. Its main function, as described there, is the representation of the images of sensory things without their matter (حضور صور الأشياء المحسوسة مع غيبة طبيعتها) (AR, p.167). In his other treatise, *On the Essence of Sleep and Vision*, al-Kindī gives the definition of the imaginative power (*al-kuwwah al-muṣawwirah*) which strikingly resembles that of *tawahhum* and in which the rationalizing feature is more accentuated<sup>26</sup>. Thus, he says that the differentia (*al-faṣl*) between the senses and the imaginative power is that the senses present us with the images of sensory objects in their matter, while this power presents us in an abstract way with individual images (*al-ṣuwar al-shakhsīyah mudjarradatan* (sic!), without their (three) dimensional substrates (*hawāmil*) and without their qualitative and quantitative characteristics. This power al-Kindī calls too *al-faṭāsīyā*. It can be concluded that imagination (*tawahhum*) is identical with the imaginative power (*al-muṣawwir* or *al-kuwwah al-muṣawwirah*). It is a rationalizing capacity of the soul, which consists in abstracting the information received from the senses. So, it functions as a cognitive link between the senses and the soul, and presents the latter with her objects of apprehension which are the abstract images of sensory individual things.

As one can see, there is no evident connection between the soul and the intellect. This can cause an epistemological problem for al-Kindī, because in such a case, the process of cognition will be fragmentary; and sensory and intellectual perceptions will be independent from each other. In the *Letter* Al-Kindī attempts to solve this problem not by

establishing an epistemological bridge between the soul and the intellect but by blurring the difference between them. In so doing, he contradicts himself on certain points. The question is how the specific notion (*al-ma' nā al-naw' ī*) can be perceived. On the one hand, since it is a kind of image due to the fact that it belongs to a species (*naw' or ṣūrah*) it cannot be apprehended by the intellect, because, as al-Kindī says, intellectual perception is an apprehension without images (*idrāk lā mithālī*). On the other hand, the specific notion and the abstracted images of the sensory things, with which the soul is presented through the imagination, seem not to be images of the same order, because the images of the species do not issue from the sensory objects, and thus, from their origin, they are not apprehended by sensory perception (*lā mawdjūdah wudjūdan ḥissīyan*); consequently, they are not later abstracted by the imagination power. Therefore, the specific notion (or better translated here as “the meaning of the species”) cannot be grasped either by the senses or the intellect.

In order to extricate himself from this impasse, al-Kindī asserts that the meaning of the species (as well as that of the genera, *adjnās*) falls under one of the faculties of the perfect human soul, which is called the human intellect. Thus, it appears that the intellect and the soul are the same ability of the human being. The specific notion, which is a kind of intellectual image, is apprehended, – or rather validated (*muṣaddaq*) – in it through self-evident intellectual premises (*al-awā' il al- 'aqlīyah al-ma' kūlah idṭirāran*). Several points remain unclear in the explanation given by al-Kindī. First, it is not obvious how this intellectual image can be dealt with by the intellect, which is, as he states in the *Letter*, exclusively *idrāk lā mithālī*. Second, al-Kindī in his exposition in the *Letter* takes

up his stand upon some abbreviated version of Aristotle's epistemological theory, as it is developed in *De Anima*<sup>27</sup> and which he does not present completely correctly. There Aristotle, after giving a long argumentation as to why perception and thinking are not identical (briefly stated, this is because perception is always true while thinking can be erroneous) concludes that the soul thinks by that part of it which is called νοῦς, mind. This thinking is possible due to the role of φαντασία, imagination. Aristotle uses the term νοῦς equivocally in his works; it can mean both mind and intellect. The latter is not part of the soul at all; it is pure rational faculty, the ultimate stage of the cognitive process, because of which cognition preserves its integrity<sup>28</sup>. Al-Kindī in the *Letter* seems to understand 'akl as pure intellect, since it is a non-imaginary apprehension, which leads him to the contradiction mentioned above. Finally, al-Kindī's chain of epistemic process (sensory object – sensory perception – imagination – memory – soul) is based on a partial representation, (and, probably, on an confusion of some of its details with the epistemic process as given in *De Anima*) of Aristotle's description of this process in *Posterior Analytics*<sup>29</sup>. What al-Kindī does not mention in the *Letter* is that Aristotle after memory mentions a very important link: experience, ἐμπειρία, (imagination is excluded from the process there) which becomes, when established, a universal notion, τὸ καθόλου, and which, when apprehended by mind or intuition (νοῦς) through induction (ἐπαγωγή) serves as the starting point for art and science (τέχνης ἀρχὴ καὶ ἐπιστήμης). The rationalising role of the imagination not being mentioned by Aristotle (he mentions it only indirectly in *De Anima*), it looks as though al-Kindī has laid the rationalising role of ἐμπειρία upon it.

It should be noted that in his treatise *On the Intellect*, al-Kindī attempts to resolve this epistemic problem by linking the soul to the (first) intellect through a chain of intellects. He opens the treatise by saying that he is going to expose not his own view, but intends to treat this question in a doxographic manner, according to what Plato and Aristotle have said on the subject<sup>30</sup>. Since he reads them through late Hellenistic sources<sup>31</sup>, his exposition is a mélange of different views coming not only from Plato and Aristotle but at least from three representatives of late Hellenistic thought : Plotinus, Alexander of Aphrodisias (d. ca. 200 AD) and John Philoponus (490-570 AD), through whose commentary al-Kindī read *De Anima*<sup>32</sup>. Al-Kindī's whole treatise is an extremely concise and obscure set of statements for which he provides no explanation. Thus, al-Kindī gives two lists of the intellects which do not match each other in all details. Based on the second list, which seems to be more elaborated by al-Kindī, the main points of his exposition are as follows : there are four intellects: 1) The Agent Intellect (*al- 'aql al fa 'āl*). It exists independently outside the soul and is a specific being, *i.e.*, being of species (*naw 'īyah*) of the things that are always in actuality. This Intellect is the cause of all other intelligible images and secondary intellects (علة وأول لجميع المعقولات والعقول الثواني). It is not God or the first cause, as might be assumed by analogy with Aristotle, because, as is asserted in the *Letter on the First Philosophy*, the intellect in general is multiple and does not possess true unity. 2) The Acquired Intellect (*al- 'aql al-mustafād*) which is in potentiality in the soul. When the soul contacts the Agent Intellect (*bāsharath*) the Acquired Intellect brings the intelligibles in the soul from potentiality to actuality. Through it the soul becomes acquiring (*mustafīdah*) and that is why the First Intellect is

also called *al-mufīd*, the Dispensing One. *Al-ʿaql al-mustafād* is briefly mentioned in the Fourth Chapter of the *Letter on the First Philosophy*, where it is equated with the Universals themselves (*al-kulliyāt a ʿyānuhā*). The acquired intellect serves for al-Kindī as an epistemic link between the soul and the first intellect. The other two kinds of intellect mentioned in the treatise *On the Intellect* belong solely to the soul. They are 3) the Appropriated Intellect (*ḡad iḡtanath* lit. which (the soul) has already appropriated) which roughly corresponds to the *intellectus habitus* of Alexander of Aphrodisias, and which exists in the soul and for the soul; and 4) the Apparent Intellect (*al-ʿaql al-zāhir*) which is the Appropriated Intellect in its active function, *i.e.*, when the soul proceeds to act.

The endeavour of al-Kindī to preserve the integrity of the cognitive process with the help of the composite nature of the intellect is not satisfactory mainly for two reasons. First, the process of the soul conjoining the intellect or the intelligible immaterial non-imaginary images (*al-ṣuwar allatī lā hayūlā la-hā wa lā fanṭāsīyā*) seems to be the mirroring of the process through which the soul acquires the images from the sensory objects (*al-ṣuwar al-hayūlānīyah*) about which al-Kindī speaks in *On the Intellect*. Thus, the soul acts in the same way vis-à-vis two qualitatively different types of images, which hazes the distinction between sensory and intellectual perception, but does not unite them in a whole. Second, in *On the Intellect*, after having dealt with sensory perception al-Kindī immediately starts the discussion on the intellect without any further mention of the role of the senses in the cognitive process. In doing this, al-Kindī overlooks (as he also does in the *Letter*) the stages through which cognition passes from sensation to

intellection as they are given by Aristotle in both *De Anima* and the *Posterior Analytics*. The gap between sensory and intellectual perceptions is not bridged by al-Kindī either in the treatise *On the Intellect* or in the *Letter on the First Philosophy*, or, to my knowledge, in any other of his extant works. His epistemological theory remains fragmentary, principally because he based it on the sources that were only partially available to him<sup>33</sup>.

### 3

#### The Context of Mathematics

The importance of mathematics is mentioned by al-Kindī in many places. In the treatise *On the Number of the Books of Aristotle*, for instance, he says that human knowledge and the understanding of the true permanent things (*al-ashyā' al-ḥaqqīyah al-thābitah*) – by which al-Kindī means the Universals – cannot be obtained without mathematics<sup>34</sup>. In the *Letter*, there is no such direct statement of its significance. Nevertheless, its indispensability for obtaining philosophical knowledge is shown through its role in scientific methodology.

For each branch of science, as al-Kindī states in the *Letter*, its proper method (*al-faḥṣ al-ta'īlīmī*, or *al-faḥṣ al-riyādī*, –terms he uses synonymously, from which can be seen the importance of the mathematical method for most of the sciences) should be acquired. Thus, in mathematics one should seek a demonstration (*burhān*) rather than persuasion (*iḳnā'*) because in the latter case understanding would be conjectural, *ẓannī*, (again he is making here an attack on the Mu'tazila) and not scientific (*'ilmī*). It is indispensable for anyone who undertakes the study of any science to inquire first what is the cause of what

falls under that science, *i.e.*, what is its subject (*mā 'illat al-wāḳi 'taḥt dhālik al- 'ilm*). Al-Kindī proceeds to give a list of the wrong applications of some scientific methods to several branches of knowledge, in which he mentions that the science of the divine (*al- 'ilm al-ilāhī*) which is true theology, or philosophy, as shown above must be studied neither through exemplification (representation: *tamthīl*) nor through sensation (*al-hiss*). Here he does not say, however, what exactly the true method for philosophy is, but when compared to what he said earlier in the First Chapter of the *Letter* about the research tools of philosophy, it becomes evident that two of them, namely, demonstration and demonstrative proof, originally are proper to mathematics. To be sure, the scientific philosophical method surpasses that of mathematics because, as al-Kindī states, not in each science solely the apodictic perception (*al-wudjūd al-burhānī*: here synonymous to demonstration) should be sought. Thus, in the science of the principles of demonstration (*awā 'il al-burhān*) one should not seek a demonstration, otherwise it would give rise to an infinite series of proofs, and that which does not end in knowledge of its principles is not knowable. Therefore, the First Philosophy, which investigates the first cause of all things, cannot be grounded exclusively on demonstration, but its method includes it. Hence, the importance of mathematics for the study of philosophy.

Al-Kindī applies the mathematical method to one of the crucial philosophical problems in the *Letter*, namely, to the impossibility of a body to be infinite in actuality. As it is one of the central points in the whole treatise, I will dwell in some detail upon it. Al-Kindī grounds his demonstration on a set of veridical premises, “thought”, as he says, without

mediation (*al-muḳaddimāt al-uwal al-ḥaḳḳīyah al-ma ḳūlah bilā tawassut*). They are six in number; at least one of them is taken from the propositions of Euclid.

- 1) The bodies (*al-adjrām*) are equal (*mutasāwiyah*) when no part (*shai'*) of each is greater than the parts of the other;
- 2) The bodies are equal when the dimensions (*ab'ād*) between their limits (*bayna nihāyātihā*) are equal in actuality and potentiality<sup>35</sup>;
- 3) What is finite is not infinite<sup>36</sup>;
- 4) For all equal bodies, if a body is added to one of them, it becomes the greatest of them, and greater than before the act of adding;
- 5) Whenever two bodies of finite magnitudes are joined, the body, which comes to be from them, is of finite magnitude;
- 6) The smaller of two generically related things measures (يُقاس: *i.e.*, is the unit of measurement) the larger one or a portion of it<sup>37</sup>.

The demonstration of the impossibility of any body to be infinite in actuality goes as follows. If an infinite body (*al-djirm lā nihāyah lah*) is divided and a body of finite volume (*mutanāhī al- 'iẓam*) is separated from it, that which remains is either of a finite volume or of an infinite volume. If that which remains is of a finite volume, then whenever the finite volume which has been separated from it is added to it, the body that comes to be from them together is a finite magnitude (premise 5). Thus, that which comes to be from them both is that which was infinite originally, before something was separated from it. Therefore, it is finite and infinite, and this is an impossible contradiction (*khulf lā yumkin*). If the remainder is of an infinite volume, then when that

which was taken from it is added to it, it (the whole) will be either greater or equal to what it was before the addition. If it is greater than it was, then that which is infinite will be greater than another infinite. Therefore, the smaller infinity should be equal to a portion (*ba 'd*) of the greater infinity, and thus the limits (*ab 'ād mā bayna nihāyātihā*) of the smaller infinity and those of the portion of the greater infinity should be equal (premise 2). So the smaller infinity, as well as the portion of the greater infinity, possesses limits, for equal bodies which are not similar (*mutashābihah*) are those in which one part (*djuz '*) is numbered the same by the same body, though they differ in abundance or quality or both, they too being finite. Therefore, the smaller infinite object is finite. However, this is an impossible contradiction. Thus, one of them is not greater than the other. If it is not greater than that which it was before it was added to (a body having been added to a body and not having augmented anything) and the whole (*djamī '*) of this is equal to it alone (it alone being a part, *djuz '*, of it) and to its own part, which two parts join, then the part is like the all (*al-kull*). This is an impossible contradiction (premise 4). Thus, it is impossible for a body to have infinity, as well as for any quantitative thing (*shay 'min al-kammiyāt*) it is impossible to be infinite in actuality.

This is the most common type of argumentation in al-Kindī's works. It recalls certain elements of the Stoic logic, namely, the conditional statements and the application of the law of the excluded middle, which the Stoics emphasized, and through which the denial of one disjunct proves the affirmation of the other<sup>38</sup>. Al-Kindī seems to be influenced by the Stoics not only in logic but also in the definition of some mathematical notions. For example, he defines body (*djirm*) as that which has three dimensions (*dhū ab 'ād*

*thalāthah*) following the Stoics who stressed the tridimensionality of the body as its main feature. Finally, it should be worth noting concerning the Stoic influence on al-Kindī's mathematical and logical views, which are tightly related to each other, that Zeno, the alleged founder of Stoic philosophy, is reported to have been influenced by the Megarian school established by Euclid<sup>39</sup>, whose propositions al-Kindī uses among his veridical premises.

#### 4

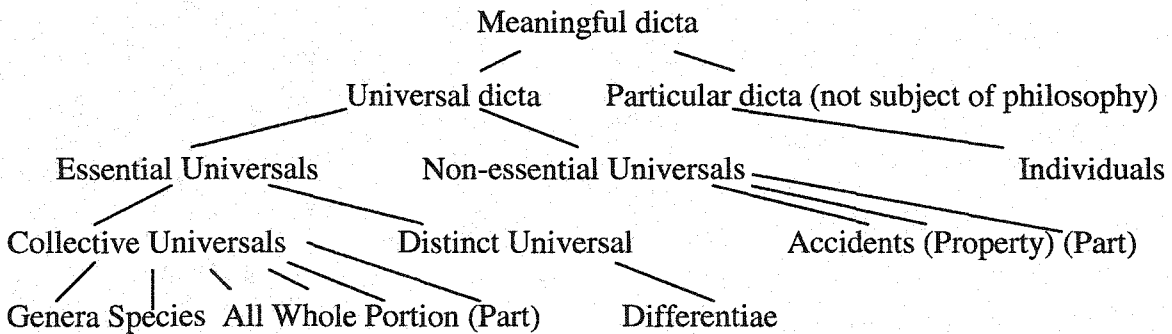
### The Context of Predicates

The *Arbor Porphyrii*, as al-Kindī sketches it in the third chapter, is directly connected with the definition of philosophy based on the notion of being *qua* being, given at the beginning of the *Letter*. This is one of the principal differences between al-Kindī's presentation of the predicates and the way Porphyry explains them in *Isagoge*. For the latter, the aim of his work, as he understood it, lay in writing a concise guide of how Aristotle's categories could be used in definitions, division and demonstration. In his work, Porphyry says, he will put aside the investigation of some profound questions, like whether genera or species exist in themselves or reside in mere concepts (εἴτε ὑφέστηκεν εἴτε καὶ ἐν μόναις ψιλαις ἐπινοίαις κεῖται)<sup>40</sup>. For al-Kindī, the question of the existence of genera and species is central. He starts the exposition of the predicates from this point after mentioning the kinds of dicta (*lafẓ*): the meaningful ones, which are the subject of philosophical inquiry, and the non-meaningful ones, which are not. The meaningful dicta are either universal or particular. Following Ammonius (ca. 440-521 AD)<sup>41</sup>, al-Kindī asserts that the subject of philosophy is not particular things but the Universals (*al-falsafah lā taṭlub al-ashyā' al-djuz'īyah*) because the particular things are not limited

(*ghayr mutanāhiyah*) and that which cannot be limited, knowledge cannot comprehend (*lam yuḥit bih al- 'ilm*).

The Universals are of two kinds: 1) Essential (*dhātīyah*) due to whose existence (*wudjūd*) the (temporal) existence (*kawn*) of a thing receives sustenance (*kawām*) and permanence (*thabāt*). That is why this kind of the Universals is also called *djawharī*, substantial. They are divided by al-Kindī into several subgroups. 2) Non-essential (*ghayr dhātīyah*) whose sustenance is due to their substrate (*al-mawḍū' lah*). These are accidents (*a' rād*).

Speaking generally, this kind of the Universals has no subdivisions, as all of them are considered by al-Kindī as concomitants to the essential Universals. Nevertheless, two subgroups can be noted here: property and accidental parts. The following scheme can be drawn to show more clearly the place of the predicates in al-Kindī's system of the Universals:



Several important conclusions can be drawn from this scheme. First, the division of the Universals according to their existence/non-existence places al-Kindī in the ranks of medieval “realists”, who asserted the “real” existence of the universal *qua* universal. Originally established by Aristotle as logical tools, the predicates gain metaphysical overtones in Late Hellenistic Philosophy<sup>42</sup>. That is why al-Kindī, under the influence of that philosophy mentions additional predicates besides those found in the *Isagoge*: the

individuals (*ashkhāṣ*), the all (*kull*), the whole (*djamī*), part (*djuz*), and portion (*ba'd*).

The sole criterion for their being included among Porphyry's predicates is their asserted "real" existence. Second, out of the five predicates of Porphyry, al-Kindī mentions four in his scheme, downplaying the role of property (*ἴδιον*, *khāṣṣah*) which he does not mention at all in his first division of the predicates, and which he later in the chapter subsumes under the accidents. The reason for this uncertain position of *al-khāṣṣah* is that al-Kindī does not correctly represent Porphyry's subdivision of the accidents. The latter divides them into the common accidents (*τὰ συμβεβηκότα κοινῶν*) which are identical with the separable accident (*τὸ χωρίστον*: al-Kindī renders this subbdivision truthfully by *al-'araḍ al-'āmm*), and the inseparable accidents (*τὰ ἀχώριστα*) whose role al-Kindī substitutes by that of property. The general impression from al-Kindī's treatment of the accident/property is that he thinks of accident in the broad sense of an adventitious attribute under the influence of Elias (VIc. AD). Another reason for al-Kindī's confusion about "property" may be due to the fact that he cannot consider it exclusively as a non-essential universal. Due to a poor translation of Aristotle's *Topica*<sup>43</sup> al-Kindī misunderstood the definition of the property as given there. Thus, in *Topica* Aristotle says that "*ἴδιον δ' ἐστὶν ὃ μὴ δηλοῖ μὲν τὸ τί ἦν εἶναι, μόνῳ δ' ὑπάρχει καὶ ἀντικατηγορεῖται τοῦ πράγματος*" ("the property is something which does not show the essence of a thing but belongs to it alone and is predicated convertibly of it")<sup>44</sup>. Al-Kindī renders this definition as follows: "the property is not the essential part of the thing but it is indicative of its essence (*munbi'ah 'an innīyat al-shay*). In a way, the situation is the

same with the part (*djuẓ* ' ) which al-Kindī classifies both under essential and non-essential Universals. The one classified under the essential Universals is the substantial part (*djawhari*: synonymous with essential, *dhātī*). Its definition is given through examples. It is either like parts of water, which are all similar to each other (this kind of substantial part is called *mushtabih al-adjā* ' , “of similar parts”); or is it like the parts of a living body (in this case it is called *lā mushtabih al-adjā* ' , “of dissimilar parts”). The part which is classified under the non-essential Universals is the accidental part, *al-djuẓ* ' *al- 'aradī*. This part is an attribute, *maḥmūl*, of the substantial part, and it is like its three dimensions, color, taste etc.

In his newly introduced predicates, al-Kindī is inconsistent in the application of the distinction between the essential and the non-essential. At least, the portion, (*ba 'd*), could have been distinguished in the same way. But despite its inconsistency, al-Kindī's striving to view the predicates in their relation to existence brings him closer than any other context analysed to the neo-Platonic themes of medieval philosophy with its hierarchy of beings. Al-Kindī, though, does not undertake their discussion in the *Letter*.

## 5

### The Context of Unity

Unity for al-Kindī exists in two ways: either metaphorically (*bi'l-madjāz*) or truly (*bi'l-ḥakk*). Metaphorically unity exists in the predicates and, consequently, in each (created)

thing (*al-kā 'in min al-makūlāt*), since the definition of each thing can be given in terms of the predicates. True unity, from which metaphoric unity derives, is applicable only to the First Cause, God.

Metaphoric unity is not true because necessarily it exists alongside with multiplicity (*al-kathrah* or *takaththur*). All things are multiple either due to division or change/motion (the latter being a kind of change), or due to the fact that a notion, like the predicates or the mathematical one (*al-wāḥid al-'adadī*) can be predicated of many things. On the other hand, if things were only multiple, a knowledge of them would not be possible, because for a thing or a notion to be an object of knowledge, it must be somehow limited. That is why some unity must exist in all things as well. For Aristotle, on whom al-Kindī bases his exposition here, there are two kinds of unity: accidental unity (κατὰ συμβεβηκός) when accidents or general terms, such as genus, refer to a single primary being; and essential unity (καθ' αὐτό ἔν) which is due either to the continuity of a thing, or to its similitude in form to another thing, or when the things belong to the same kind or genus, or when their definitions are indistinguishable<sup>45</sup>. Al-Kindī, though accepting this Aristotelian distinction (*wāḥid bi'l-dhāt* and *wāḥid bi'l-'arad*), in fact subsumes Aristotle's essential unity under unity by metaphor and stresses exclusively the accidental unity in the instances, where for Aristotle the unity would be essential. Genera and species, for example, do possess unity, al-Kindī states, because they are predicated univocally (*mutawāṭi'an*): genera of the species, and species of the individual. This is a metaphoric unity, since they are predicated of a multiplicity of things (this unity would be essential for Aristotle). The individual (*al-shakhs*) in its turn, is one only by convention,

(*bi'l-waḍ'*), not essentially, *bi al-dhāt*, (for Aristotle it would be one essentially due to its continuity) since in reality it is physically divisible (*munkasim*). The unity of all other things is likewise divisible. Essential unity is reserved by al-Kindī solely to the First Cause. Having thus broken with Peripatetic tradition, al-Kindī begins advocating the true essential unity, which is more akin to neo-Platonic thought. This is the second instance (besides the predicates), and the last in the *Letter*, where the neo-Platonic element is quite conspicuous in al-Kindī's philosophy. He starts this theme with a statement asserting a link between metaphoric and true unity: that which is accidental in one thing should be essential in another. The accident is an affect in what it occurs (*al- 'āriḍ athar fī al-ma 'rūd fih*). The affect is a relative term (*min al-mudāf*) it must come necessarily from an agent (*mu 'aththir*) therefore an accidental unity is an affect coming from an agent whose unity is essential. Speaking about the correlation (*athar/mu 'aththir*) in his treatise *On the True First Agent*<sup>46</sup>, al-Kindī uses these terms along with the more usual *munfa 'il/fā 'il*, following Asṭāt's translation of Aristotle's παθητικόν/ποιητικόν<sup>47</sup>. Here in the *Letter*, he prefers the first variant, probably to accentuate that in reality all other "agents" are the affects of the First Cause.

The First Cause is described by al-Kindī through a series of negations, which places him in the ranks of those who explicated the nature of God apophatically. This tradition, which started from Albinus (II c. AD), has as its main representatives Plotinus, Pseudo-Dionysius (ca. 500 AD) and John of Damascus (ca. 675 - ca. 750). It was also continued among the *mutakallimūn*, in the works of Abu al-Hudhayl (Abū Hudhayl al-'Allāf, ca.

752-840) and al-Nazzam (d. 835 or 845), for example. It is difficult to say, by whom al-Kindī was most influenced in his views on the nature of God, (probably Plotinus, as he read the *Uthūlūdījyah*), but almost certainly, those were not the *mutakallimūn*, since any allusion to a link between God and the creation would not be acceptable for them. Thus, al-Kindī says, the True One is neither matter (*hayūlā*) nor form (*ṣūrah*), nor quantity, nor quality, because all these are divisible. The One is not a relation, as it does not acquire unity from another thing (*lam yufid al-waḥdata min ḡhayrih*). The True One is not the intellect, which is multiple as a result of the multiplicity of the Universals; It is not the soul, because the soul is subject to change/motion, as thoughts pass in it from one form (*ṣūrah*) to another. Finally, the True One is not the mathematical one (*al-wāḥid al-ʿadadī*) because the latter, though being not a number properly speaking but the principle, (*rukṇ*) of numbers and thus being indivisible and exempt from characterization by equality/non-equality, is still multiple, like all units of measurement, because it measures different substrates. The True One is not described by any of the remaining intelligible things. Moreover, the unity of all other things derives from It, the unity (here understood as both kinds of unity, the true one and the metaphoric one) being the cause of existentionation of every multiple thing (*tahawwī kull kathīr bi al-waḥdah*). Therefore, all things come into being from Its unity (*waḥdatih*) and then pass to that which is other than Its being (*ilā ḡhayr hawīyatih*), i.e., to their own existence. This process is the emanation (*fayḍ*) of unity from the True One. Al-Kindī ends the Letter on this neo-Platonic note, equating unification of (created) things with their individual existence, (*tawaḥḥuduhā huwa tahawwiyuhā*).

## The Context of Ontology

In my opinion, al-Kindī's philosophical outlook, despite some neo-Platonic influences (which I have tried to delineate above) remains mainly Aristotelian. The proof of this is the numerous similarities between him and Aristotle concerning ontological issues. Some passages from the *Metaphysics* (in Aṣṭāt's translation), which I will mention in Part II of this work, are almost literally quoted in the *Letter*. And since philosophy, in al-Kindī's view, studies primarily being *qua* being, these similarities allow us to say that al-Kindī conceives of his philosophy mostly along Peripatetic lines.

The Context of Ontology penetrates the *Letter* from beginning to end and touches upon numerous philosophical themes, of which the following three are central: a) the relation between essence and individual existence; b) characteristics of the eternal; c) finitude and infinity in actuality and potentiality. The themes are logically connected, and though al-Kindī does not discuss them in this order, it would be better, I believe, to keep this sequence for a more detailed analysis.

a)

### Essence and Individual Existence

Al-Kindī starts his discussion with the question whether it is possible for a thing to be the cause of the generation, or existence (*kawn*) of its essence (*dhāt*). By *kawn* he means here an individual existence, *tahawwin*, which R. Rached and J. Jolivet translate also as "constitution en sujet". Al-Kindī investigates four variants of logically possible relations

between a thing (thing is here synonymous with *tahawwin*) and its essence. He makes it seem beforehand that none of the variants is valid, though with his penchant for unnecessary details, he goes through all of them. I shall briefly mention all the variants.

1) A thing is an existent (*aysa*) while its essence is a non-existent (*laysa*). 2) A thing is a non-existent, while its essence is an existent. 3) A thing and its essence are both non-existents. 4) A thing and its essence are both existents. It is obvious from the first that the third variant is beyond discussion, because if neither a thing nor its essence is existent, there is nothing to talk about; or, as al-Kindī puts it, in this case there is neither cause (*'illah*) nor effect (*ma'lūl*) because cause and effect are predicated of something that has existence. The first two variants are not possible either, because they contradict the postulate that the essence of every thing is that thing (*kull shay' fa-dhātuh hīya huwwa*).

Indeed, if something occurs (*ya'rid*) to a thing, (for example, non-existence) which does not happen to another, these things cannot be considered the same. The fourth variant is invalid too, because in such a case a thing would be the cause of its effect. The cause and the effect of the cause being different from each other (this is an old argument which al-Kindī borrows from the Stoics)<sup>48</sup>, there would be a contradiction to the above-mentioned postulate. This exposition of al-Kindī is a very brief and rather superficial summary of Aristotle's explication in the *Metaphysics* of the kinds of relation of the essence (τὸ τί ἔστιν) to being, or substance (οὐσία)<sup>49</sup>. Aristotle's final conclusion is that the essence and its substance are one. Hence al-Kindī derives his postulate that the thing and its essence must be one. Aristotle says nothing, however, about the self-sufficiency of the essence, whereas for al-Kindī to prove that no essence can be self-sufficient is here the major

point. In this al-Kindī contradicts himself, for if the essence of a thing is an effect of something else, that is, its generation is due to an external cause, it cannot be identical with its thing. To make things still less clear, al-Kindī, dealing with this topic, confuses terminology. Thus he renders Aristotle's τὸ τί ἔστιν by *dhāt*, while in the translation of the *Metaphysics* made for him by Aṣṭāt this term is rendered by *aysa* (or *aysu*). The latter is roughly used by al-Kindī as an equivalent to Aristotle's οὐσία. Al-Kindī's *dhāt* means rather "self"; this meaning is more obvious at the end of the third chapter where he explains the necessity of the correlation between unity and multiplicity. One very important conclusion can be drawn from this rather confused explication of the essence/existence relation: the essence is not the cause of the generation of its thing, it cannot thus be identified with the Platonic forms, nor can it be associated with the neo-Platonic hierarchy of beings with God as their ultimate essence. Al-Kindī, no matter how he might simplify Aristotle on this point, remains here a Peripatetic.

b)

### **Characteristics of the Eternal**

As shown above, neither essence is the cause of its individual existence, nor is individual existence the cause of its essence. Both depend on an ultimate external cause, which necessarily must be *causa sui*, otherwise there would be an infinite regression of causes. That is why one of the principal characteristics of this ultimate cause is that it has no existential "before" to its being (*lā ḡabla kawṇīyan li-huwīyahih*). Its sustenance (permanence), *ḡiwāmuh*, is not due to another. This cause cannot be defined in terms of the predicates, because the predicates are general terms that are predicated of a multiplicity of things, whereas the ultimate cause must be unique. In this, al-Kindī

follows John Philoponus who writes in the *Refutation of Aristotle*: “μόνον τὸ πρῶτον ἀγέννητόν (i.e., without genus) ἔστι καὶ ἀναίτιον”<sup>50</sup>. It has therefore neither subject (*mawdū* ‘) nor predicate (*maḥmūl*) nor agent cause ( *fā ‘il*) nor final cause (*sabab*). The essence of this cause, unlike other essences, must be necessarily simple, since it is not composed (*murakkab*) of genus, species and differentia. Finally, Its essence must be eternal (*azalī*): It does not undergo corruption (*fasād*) because corruption involves changing the predicate (*tabaddul al-maḥmūl*) and It has no predicate. Thus, this eternal ultimate cause does not require absolutely (*muṭlaqan*) what is not It, (*mā laysa hūwa*).

At first, it looks as if al-Kindī identifies the ultimate eternal cause with the primary substratum (*al-ḥāmil al-awwal*) about which he speaks after having given the foregoing characteristics of the eternal. The primary substratum is also eternal, since as such it never changes even if the things or individual existences, which it underlies themselves, change. The corruption of what corrupts is not the existentiality of its existence (*al-fāsīd laysa fasāduh bi al-ta ‘yīs aysīyatih*). In other words, the primary substratum is pure being (or rather essence, as I shall show further: *aysu*) that is not involved in any of the changes of individual beings. This is an intrusion of the Aristotelian theme of the eternity of ὅλη or ὑποκείμενον (rendered by al-Kindī as *al-ḥāmil al-awwal*) into the set of the characteristics of the eternal, which are largely borrowed from John Philoponus. For the latter, everything but God, the First Cause, is created, including prime matter, the duration of which depends upon His will. This distinction between the nature of God and the nature of Nature, φύσις, as to the creation of things is clear from the following

passage, reported by Simplicius (first half of VI c. AD): καὶ γὰρ ἡ φύσις, φησί, μὴ ποιῇ τὴν πρώτην ὕλην, ἀλλ' ὁ θεὸς ποιεῖ αὐτὴν οὐκ ἐξ ὕλης, ὥστε καὶ φθείρει αὐτὴν ὅταν θελήσῃ εἰς τὸ μὴ ὄν (“he says that the nature does not create the prime matter but that God does not create it out of matter, and that He destroys it into non-being whenever He wants”)<sup>51</sup>. Al-Kindī seems to be in accord with these views of John Philoponus. He too upholds the idea of *creatio ex nihilo*, most clearly expressed by him in the treatise *On the Number of the Books of Aristotle*, and, just like John Philoponus, asserts the distinction between the Eternal (God) that is unchangeable and can create out of nothing in no time (*kun fa-yakūn*) and Nature, which is in constant change and, thus, not eternal properly speaking. Still, he does not know how to deal philosophically with prime matter, given that it should be also created and consequently, not eternal. In order to find a way out al-Kindī has to implicitly ascribe it eternity (he never states directly that *al-ḥāmil al-awwal* is eternal (*azalī*) the term being reserved by him only for the First Cause), thus following Aristotle. In the treatise, *On the Explanation of the Proximate Cause of Generation and Corruption*, dealing with a similar situation when speaking about the outer spheres and the four prime elements, which are too eternal for Aristotle, al-Kindī, slightly disguising his Aristotelian standing, describes them as ‘permanent’, which last (*ayām muddah*) as long as God wills. These attempts clearly show that, in spite of the fact that al-Kindī tries to elaborate his philosophical system in the light of a monotheistic religion that presupposes creation out of nothing and evanescence of the created, he has to recur to the Aristotelian paradigm to preserve the integrity of his philosophical system.

c)

## Finitude and Infinity in Actuality and Potentiality

The logical impossibility of any body (*djirm*) to be infinite in actuality (*bi'l-fi ʿl*) is proved by al-Kindī in the way shown above. Not only is body finite, but any quantity is finite in actuality as well. More clearly, this can be shown in a list of correlatives al-Kindī deals with in the second chapter of the *Letter*. For al-Kindī, a correlative (*min al-muḍāf*) is such a term that necessarily presupposes a simultaneous existence of another term, which shares some of its (the first term's) basic characteristics. Existentially, one correlative term is dependent upon the other. The first pair of correlatives is body-motion (*djism-ḥarakah*). Each body is brought into existence through composition (*tarkīb* or *i'tilāf*). *Tarkīb* and *i'tilāf* are kinds of change (*tabaddul*) which is equated by al-Kindī with motion. Therefore, whenever there is body, there must be motion, which is simultaneous in time with the existence of body. This agrees with the position of Aristotle: “κίνησις δ' ἄνευ φυσικοῦ σώματος οὐκ ἔστιν”<sup>52</sup>. Existentially, nevertheless, body is prior to motion, because motion is predicated of body and not vice versa. This is due to the following reasoning that can be reconstructed from al-Kindī's scattered arguments. Body is created out of nothing, therefore it is something given, actual. When there is body, motion is possible. From this it ensues that motion necessarily exists in some bodies, for that which is possible is that which exists (in actuality) in some possessors of its substance (*li-anna al-mumkin lah shay' huwa al-mawdjūd dhālik al-shay' fī ba'd dhawāt djawharih*)<sup>53</sup>. The last statement is based on Aristotle's assertion of the priority of actuality to potentiality<sup>54</sup>. This is so due to the final cause, ἐντελέχεια, which al-Kindī

also recognizes but does not mention in this context. For man, as Aristotle says, is prior to the material he is made from, because this material is not yet in operation. Thus, actuality is prior to power (potentiality) in being, because the actuality is the end for the sake of which this power is possessed: “τέλος δ’ ἡ ἐνέργεια, καὶ τούτου χάριν ἡ δύναμις λαμβάνεται” (“actuality is the end, entelechy, and for its sake, potentiality is sustained”)<sup>55</sup>. Therefore, body is in a sense prior to motion, while motion existentially depends on body.

Motion is finite, since whatever is predicated of something finite, must necessarily be so. The second pair of correlatives is motion-time (*ḥarakah-zamān*). Time is the number of motion (‘*adad al-ḥarakah*). Whenever there is motion, there is time, which depends on it and is, therefore, also finite. The third pair of correlatives is place-spatial object (*makān-mutamakkin*). Any body is *mutamakkin*, which follows from its definition as a three-dimensional object. Wherever there is a body, there is place (space) necessarily, which is finite because it is dependent on a body. These correlatives serve for al-Kindī not only to show the actual finitude of the universe in actuality from, so to speak, all sides, including besides the body of the universe (*djirm al-kull*) such quantitative magnitudes as time, space, and motion, but also to demonstrate that neither time nor motion could have preceded the body of the universe coming into being. This is one of the fundamental differences between al-Kindī and Aristotle: for the latter the world, time and motion are eternal; for al-Kindī the creation happens not in time (for that would presuppose that time and therefore motion existed already before the creation of the universe) but simultaneously.

The aim of al-Kindī in arguing for the finitude of body and of any quantitative magnitude is to prove that the universe was created. His argumentation is a slight modification, as H. Davidson remarks<sup>56</sup>, of John Philoponus' arguments that the infinite cannot be increased in actuality; in an eternal universe (*i.e.*, in such a universe that is infinite in time), there would have to be addition of movements of the planets, consequently an eternal universe is impossible. That is why the universe has only finite power, since infinite power, ἀπείροδυναμια, cannot be present in a finite body. Al-Kindī mirrors the last statement of John Philoponus in saying that since the *innīyah*, being, of the universe is finite, the universe is generated.

In potentiality, though, the universe is infinite, because any quantity can be added to in imagination (*bi'l-wahm*). A. Ivry remarks that this is kind of "whimsical" possibility which is not taken seriously by al-Kindī, that is why, unlike Aristotle, he is left solely with an actually finite world, completely dependent on an external agent. This may be true, but later, in the fourth chapter, when speaking about the relativity of such attributes as big/small, long/short etc., al-Kindī proves that none of these attributes can be predicated absolutely (*mursalan*) recurring to imagination. Thus, I would rather say that this is probably another inconsistency of al-Kindī and that imagination, (*wahm* or *tawahhum*) plays a significant role in his philosophy.

<sup>1</sup> Cf. "In Porphyrii Isagogen." *Commentaria in Aristotelem Graeca* iv/3, p.6.

<sup>2</sup> Cf. R. Frank. *Beings and Their Attributes*. Albany: State University of New York Press, 1978, p.59.

<sup>3</sup> *Met.* II: 1. 993b 20.

<sup>4</sup> *Plotinus apud Arabes*. Edited by A. Badawi. Kuwait: Editio Tertia, 1977, p. 26-27.

<sup>5</sup> Al-Kindī. *Rasā'il al-Kindī al-Falsafīyah*. Edited by M. Abu Ridah. 2 vols. Cairo, 1950-1953, p. 215.

<sup>6</sup> *Met.* II: 1. 993b 27-30.

<sup>7</sup> *Ibid.*

<sup>8</sup> *Ibid.*

- <sup>9</sup> AR I: p. 172.
- <sup>10</sup> A. Ivry, *Al-Kindi's Metaphysics*. Albany: State university of New York Press, 1974, p. 119.
- <sup>11</sup> Plato. *Thaetetus* 176 B.
- <sup>12</sup> AR, *ibid*.
- <sup>13</sup> G. Atiyeh. *Al-Kindi: The Philosopher of the Arabs*, Rawalpindi: Islamic Research Institute, 1966, pp. 123-143.
- <sup>14</sup> For interrelation between *ilm*, practical wisdom and *adab*, see a long discussion in F. Rosenthal. *Knowledge Triumphant*. Leiden: E. J. Brill, 1970, pp. 252-298.
- <sup>15</sup> A. Ivry, *ibid*.
- <sup>16</sup> F. Rosenthal, "Al-Kindi and Ptolemy." *Studi Orientalistici In Onore Di Giorgio Levi Della Vida* 2 (1956), p. 444.
- <sup>17</sup> AR, pp. 372-374.
- <sup>18</sup> R. Walzer. "New Studies on Al-Kindi" in *Greek into Arabic*, ed. by R. Walzer. Oxford: Bruno Cassirer, 1963, p. 177.
- <sup>19</sup> See examples quotes in the *Encyclopedia of Islam*, v. VII, p. 1051. Also see J. Schacht, *The Origins of Muhammadan Jurisprudence*; Oxford, 1950, pp.128, 258.
- <sup>20</sup> AR, p. 176.
- <sup>21</sup> AR, p. 168.
- <sup>22</sup> AR, p. 171.
- <sup>23</sup> David. *Prolegomena et in Porphyrii Isagogen Commentarium*. Ed. by A. Busse. In CAG, vol. 18, no. 2, 1904, p. 20.
- <sup>24</sup> JJ, p. 15 lines 9-10.
- <sup>25</sup> AR, p. 167.
- <sup>26</sup> AR, p. 295.
- <sup>27</sup> *De An.* III: 3-4.
- <sup>28</sup> *De An.* III: 5 430a 17-18, 22-23. *Met.* 989b 15; 1065b 4; 1069b 31; 1071a 3.
- <sup>29</sup> *Post. An.* II: XIX.
- <sup>30</sup> AR, p.353.
- <sup>31</sup> G. Endress. "The Circle of Al-Kindi" in *The Ancient Tradition in Christian and Islamic Hellenism*, Leiden: Research School CNWS, 1997, pp. 52-58.
- <sup>32</sup> Cf. Abū Ridāh's introduction to al-Kindi's treatise On the Intellect in AR, pp.312-352. See also G. Endress, pp. 56-57.
- <sup>33</sup> G. Endress, *ibid*. F. Peters. *Aristotle and the Arabs*. New York/New York University Press; London/University of London Press LTD, 1968, pp. 57-67.
- <sup>34</sup> AR, p. 376.
- <sup>35</sup> This premise can be partially based on the Stoics' most common definition of body as threefold extension together with resistance (τὸ τριχῇ διαστατὸν μετὰ ἀντιτυπίας). See A. Long and D. Sedley. *The Hellenistic Philosophers*. Cambridge University Press, 1999. Vol 1, p. 272.
- <sup>36</sup> This is probably a paraphrase of Aristotle's statement that two contradictory features cannot be predicated at the same time of the same thing.
- <sup>37</sup> This premise is based either on definition 1, Book V from Euclid's *Elements*: μέρος ἐστὶ μέγεθος τὸ ἑλάσσον τοῦ μείζονος, ὅταν καταμετρήῃ τὸ μείζον (a magnitude is a part of a magnitude, the less of the greater, when it measures the greater); or, which is more likely, on proposition β 19, Book VII: εἴαν γὰρ ἀριθμὸς ἀριθμοῦ τὸ μέρος μετρήῃ, μετρήσει καὶ τὸν ὅλον, καὶ εἴαν τὸν ὅλον, καὶ τὸ μέρος. See T. Heath. *The Thirteen Books of Euclid's Elements*. Vol II. Cambridge: at the University Press, 1908, p. 115 (for def. 1) and *Euclidis Elementa*. Vol. V pars 2, ed. by S. Stamatis. BSB B. G. Teubner Verlagsgesellschaft, 1977, p. 43 (for prop. β). It should be noted that A. Ivry gives a wrong translation of this premise of al-Kindi, which leads him to an erroneous comparison of it to a statement of al-Nazzam. See A. Ivry, p. 148.
- <sup>38</sup> See examples of the Stoics' logical reasoning in A. Long and D. Sedley, *op.cit.*, pp. 208-210.
- <sup>39</sup> B. Mates. *Stoic Logic*. Berkeley and Los Angeles: University of California Press, 1961, p. 5.
- <sup>40</sup> Porphyre. *Isagoge*. Paris: Librairie Philosophique J. Vrin, 1998, p. 1.
- <sup>41</sup> Ammonius. *In Porphyrii Isagogen sive V Voces*. Ed. by A. Busse. In CAG, vol 5, no.3, 1891, 59. 18-60.

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- <sup>42</sup> Porphyry the Phoenician. *Isagoge*. Translation, introduction and notes by E. Warren. Toronto: the Pontifical Institute of Medieval Studies, 1975, pp. 15-16.
- <sup>43</sup> A. Ivry, p. 173.
- <sup>44</sup> *Topica*, I : 5 102a.
- <sup>45</sup> *Met.* V: 6.
- <sup>46</sup> AR, pp. 183-184.
- <sup>47</sup> A. Ivry, p. 155.
- <sup>48</sup> Cf. A. Long, D. Sedley, *op.cit.* vol. 1, p. 333, quoted from *Stobaeus* I. 138,14-139,4: "Zeno says that a cause is "that because of which", while that of which it is the cause is an attribute; and that the cause is a body, while that of which it is a cause is a predicate".
- <sup>49</sup> *Mantiq Aristū*, II p. 407. *Met.* I 2; VII 3-6.
- <sup>50</sup> *Simplicii in Aristotelis Physicorum Libros Commentaria*. Ed. by H. Diels. CAG vol. 10. Berlin, 1895, p. 1326.38.
- <sup>51</sup> *Ibid.*
- <sup>52</sup> *De Caelo* I 9 279a 15.
- <sup>53</sup> JJ, p. 33 lines 13-14.
- <sup>54</sup> *Met.* IX 8 1049b 18.
- <sup>55</sup> *Ibid.*, 1050a 4.
- <sup>56</sup> Davidson, H. "John Philoponus as a Source of Medieval Islamic and Jewish Proofs of Creation". *Journal of the American Oriental Society* 89 (1969), p. 363.

## Part II

### The Technical Terms

In order to analyze the technical terms as accurately as possible, the above-discussed contexts should be taken into account. Nevertheless, not all of the contexts mentioned could be fully *mis en jeu* for this purpose. Thus, most of the terms used in the Philosophical context might be more conveniently regrouped as the ontological terms, epistemological terms, etc. the previous division still being kept in mind and recurred to when shades of meaning have to be established. Moreover, such regrouping would be more suitable in view of the great number of technical terms al-Kindī uses in the *Letter* (of which it is possible to discuss only the key ones here).

The discussion will be three-fold: firstly, whenever it is possible, I shall try to give a historical account of how such a term first appeared in the translation literature; secondly, I shall analyze what meanings al-Kindī ascribes to the term in the *Letter*; and thirdly, I shall compare the term's usage, proper to al-Kindī, with the general usage of the term in Arabic philosophical works, mostly relying on *A Dictionary of the Technical Terms Used in the Sciences of the Muslims* by al-Tahānawī [d. 1158 H/1744 AD]<sup>1</sup>.

#### Why al-Tahānawī?

##### (a historical note)

All sorts of compendia and dictionaries intended to facilitate an acquisition of various branches of science have been appearing throughout the history of Islamic civilization. The first among them were of purely linguistic character: they dealt with various sides of language, such as grammar, lexicography, rhetoric (*'ilm al-balāghah*) etc. Some of the

most famous authors of this kind of dictionaries and compendia were: Abū Amr Shaybānī Kūfī (d. 206 H/820 AD); Khalīl Ibn Aḥmad Farāhīdī (100-173 H/718-788 AD), founder of the rules of Arabic prosody (*al-ʿarūḍ*); Sibawayhi Fārisī (121- 161 H/739-779 AD), who wrote a famous book of the grammar of the Arabic language, and many others. In their works, these authors discuss in detail various forms of such and such a word in different dialects of the Arabic language, differences between the vocabulary of such and such a poet, and try to establish rules of grammar either by analogy (*kiyās*) or deduction (*istikrāʾ*). These works contain no information about how such and such a word was used as a philosophical term, because most of them had been written before *falsafa* was introduced into Islamic culture (in fact, the most fundamental of these works had appeared before al-Kindī, the first Arab philosopher, was born). That is why, they are of little help as regards al-Kindī's philosophical vocabulary.

Another kind of dictionaries and compilations started to appear shortly after al-Kindī's death. They deal mainly with the terminology in different sciences (*muṣṭalahāt* or *iṣṭilāḥāt al-funūn* or *al-ʿulūm*). They are very numerous. Some of the principal ones are the following:

- 1) al-Farābī's (d. 339 H/950 AD) *Iḥṣāʾ al-ʿUlūm* (*The Enumeration of Sciences*). It is not a very extensive work, but despite its brevity, it attracted attention of many scholars and was translated into many European languages.
- 2) *Mafātīḥ al-ʿUlūm* (*The Keys of the Sciences*) by Abū Abd Allah Ibn Aḥmad Khawārizmī (d. 387 H/996 AD); it investigates tersely what each science, such as logic (*al-manṭiq*), pharmacy (*adwiyah*) etc, is.

3) *Ta'rifāt (Definitions)* by al-Djurdjānī (d. 1413 AD); it is rather similar both in contents and in composition to al-Farābī's *Ihsā'*.

Some other interesting works of this kind à signaler are the following: *The Letters of the Brethren of Purity*, a collective work of a group of Islamic gnostics (IV c. H/X c. AD); *Mukābasāt* by Abū Hayān Tawhīdī (d. 300 H/912 AD); *Al-Mudhish* by Ibn Djawzī (d. 598 H/1201 AD); *Ḥaḳā'ik al-Anwār* by Fakhr Rāzī (d. 606 H/1209 AD); *Aḳsām al-Ḥikmah* by Naṣīr Ṭūsī (d. 672 H/1272 AD); *Namūdhadj al-'Ulūm* by Muḥammad Shāh Fanārī (d. 839 H/1434 AD); and *Al-Nuḳāyah* by Djalāl al-Dīn Suyūfī (d. 911 H/1504 AD).

All these works in some way are concerned with scientific terminology. Ideally, one should take into consideration as many of them as possible while analyzing al-Kindī's technical vocabulary. However, this goes beyond the scope of the present thesis, whose main objective is to analyse al-Kindī's technical terms primarily as used in the *Letter* and in some other of his philosophical treatises, and to compare their usage to that in the Greek sources (mainly in works of Aristotle, on whom al-Kindī builds his argumentation most frequently). Nevertheless, when a sufficient elucidation of the meaning of a term is possible only through tracing its further destiny in the philosophical literature after the death of al-Kindī, a reliable reference has had to be found. Such a reference should be first of all comprehensive, that is, chronologically, late enough to encompass all main works that deal with scientific technical terminology. Secondly, to facilitate the tracing of the terms under consideration, it should be structured as a dictionary rather than a summarising treatise on various branches of science.

For these reasons I have chosen the *Kashshāf* by al-Tahānawī. Indeed, it appeared in 1158 H/1744 AD, the year of the death of its author, that is, long after the works of al-Farābī, Djurdjānī and others. It is comprehensive : al-Tahānawī quotes in it many authors, though sometimes without mentioning his sources. And finally, unlike *Mafātīḥ al- 'Ulūm* by Khawārizmī, al-Kashshāf is structured as an encyclopaedic dictionary, which facilitates its usage.

In some cases, however, I have made a few references to al-Djurdjānī as well as to several medieval Arab linguists.

## **The Ontological terms**

Beginning the analysis of the technical vocabulary of al-Kindī with the ontological terms is justified, in my view, by the fact that they serve as basic terminology for him to explain a variety of philosophical issues, dealing with epistemological, mathematical and other questions. These terms occur in all the contexts in which they gain a vast ramification of meanings and rich synonymy.

### ***Innīyah* (being)**

The exact meaning as well as the origin of this term, translated as being, is uncertain<sup>2</sup>.

Al-Djurdjānī [al-Sayyid al-Sharīf] lists *innīyah* in his *Book of Definitions*, in the form of *āniyah*<sup>3</sup>. It indicates for him individual existence or an individual existent, *al-wudjūd al-*

'*aynī*, that is, an existent that is perceived by the senses, in contradistinction to *māhīyah*, an existent that is perceived by the intellect.

As for the origin of this term, some of the Arab linguists, like Abū'l-Baḳā'<sup>4</sup> [Abū'l-Baḳā' Kafawī, d. 1059 H/1648 AD]<sup>5</sup> asserted that it is a derivative of the emphatic *inna*, which in the Arabic language stresses the existence of a thing. From this it would follow that *innīyah* indicates the permanent existence of a thing in a way that it (this existence) is perceived directly by the senses. This assertion is in accord with the opinion of al-Djurdjānī.

Abd al-Raḥmān al-Badawī<sup>6</sup> upholds quite a different view on the origin and the original meaning of *innīyah*. In the *Uthūlūd̲j̲īyā of Aristotle*, edited by him, he uses this term in the form of *āniyah*, as al-Djurdjānī does in the *Book of Definitions*, but unlike the latter he assumes that it derives from the Greek εἶναι, to be. Thus, *āniyah* would mean for him pure unqualified existence. Mlle Goichon in her *Lexique de la langue philosophique d'Ibn Sina*<sup>7</sup> generally agrees with the view of Abu al-Baḳā' that the origin of *innīyah* is *inna*. She points out that the emphatic *inna* in some cases has a close meaning to the Greek ὅτι (that), which is somewhat equivalent to τὸ ὄν, being. She gives several examples of *inna(u)* and *innīyah* used by Ibn Sina to indicate existence, as in the following phrases from his *Al-Nadjāh wa al-Shifā*<sup>8</sup>: *أَلصِّفَةُ الْأُولَى لَوَاجِبُ الْوُجُودِ أَنَّهُ إِنَّهُ وَمَوْجُودٌ* (the first attribute of the Necessarily Existent is that He is *innu* and existent) and in *الْإِنْبِيَاءِ لَا مَاهِيَةَ لَوَاجِبِ الْوُجُودِ غَيْرَ أَنَّهُ وَاجِبٌ وَهَذِهِ هِيَ* (there is no essence for the necessarily existent but

that it is necessary, and this is *innīyah*, existence). It seems that *innīyah* in this context has the meaning of pure existence, like A. Badawi's *āniyah*.

In the *Letter*, al-Kindī uses *innīyah* either in the plural, *innīyāt* (probably the more frequent usage), or in the singular when speaking about the being of something. He uses this term in the plural, for example, when establishing an ontological link between Truth and beings, *al-innīyāt*<sup>9</sup>. In *On Definitions* he gives the following definition of philosophy: "it is knowledge of eternal universal things, their beings (*innīyāt*) essences and causes"<sup>10</sup>. If *innīyah* meant pure existence for al-Kindī in these cases, he would most likely use it in the singular; therefore it can be concluded that *innīyāt* means for him individual existences. Further, if *innīyah* signified for him, like for al-Djurdjānī, sensory existence, he would not use this term in the definition of philosophy, since, as has been shown in the Context of Epistemology, philosophy does not consider the particulars but only the universals. The conclusion, based on this usage of *innīyah* by al-Kindī, is that for him it means an individual existence as perceived by the intellect. That this meaning is most likely to be correct is corroborated by al-Kindī's usage of this term in the singular in the following instances: 1) when speaking about the four scientific inquiries, he states that *what (mā)* the second scientific inquiry, investigates the genus of every existent, *innīyah*<sup>11</sup>; 2) on several occasions, when proving the finitude of time he says that the existence (*innīyah*) of body and time is finite<sup>12</sup>; 3) he uses this term as well when speaking about the finite existences of the body of the universe, *djirm al-kull*<sup>13</sup>. Never in the *Letter* does he use *innīyah* to denote being in general, it is always either beings or the being of something. To indicate pure being al-Kindī uses *kawn*, *wudjūd* or *aysa*. That is why, to my mind, A. Ivry's suggestion (based on M. T. d'Alverny's article) that al-Kindī

uses *innīyah* both the in broad (pure existence) and the narrow (individual existence) senses is not plausible<sup>14</sup>.

Al-Tahānawī does not mention *innīyah* in his dictionary, probably because in later Arabic philosophical works it was mostly replaced by more common *huwīyah*, *kawn* and *wudjūd*.

### **Djawhar (substance)**

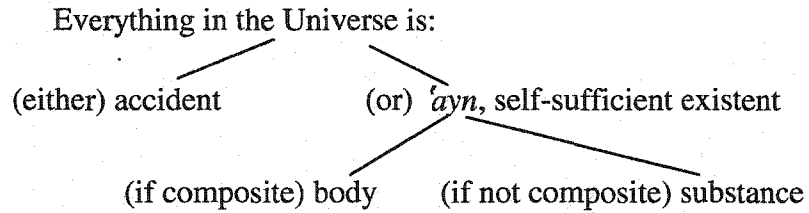
Al-Kindī uses *djawhar* in the *Letter* in many places but without giving a definition. To elucidate properly its meaning it is better to start with how he defines it in *On Definitions*. There al-Kindī says that *djawhar* is that which subsists by itself, which serves as substrate for accidents and whose essence, *dhātīyatuh*, does not change. *Djawhar* is always predicated of, but is itself never a predicate, and it is not subject to generation and corruption (since in these cases a new substance comes into being)<sup>15</sup>. This definition generally holds true in the instances *djawhar* is used in the *Letter*, but there, several new details are added to its meaning.

Al-Kindī first mentions *djawhar* in the classification of changes<sup>16</sup>: generation and corruption are the changes of *djawhar*. This is one of the four Aristotelian kinds of change, namely, the substantial change (κατ' οὐσίαν)<sup>17</sup>; hence, it appears that al-Kindī's *djawhar* is equivalent to Aristotle's οὐσία. *Djawhar* has an Aristotelian meaning too in al-Kindī's definition of body, where, as in the *Metaphysics*<sup>18</sup>, it is identified with matter: body, *djirm*, is a long, broad, deep substance (*djawhar*)<sup>19</sup>. That matter is a kind of substance is clear from al-Kindī's division of *djawhar* into the simple substances (*al-djawhar al-basīṭ*), they are matter, (*'unṣur*) and form, *ṣūrah*) and the composite (*al-*

*murakkab*) substance, which is formed matter<sup>20</sup>. Finally, as was shown in the Predicates Context, al-Kindī divides the universals into the essential, *dhātīyah* (they are also called there substantial, *djawharī*) and the non-essential or accidental (*ghayr dhātīyah*)<sup>21</sup>. In other words, on the one hand, *djawhar* and *dhāt*, “essence”, have the same meaning for al-Kindī and thus can be used synonymously, because each of them is that through which the subsistence or permanence (*kiwām*) of a thing is possible. On the other hand, they are both opposite to *‘araḍ*, accident. None of these relations, substance-essence and substance-accident, is fully investigated by al-Kindī in the *Letter*. For al-Tahānawī these relations seem to be important, he treats them at length along with some other meanings of *djawhar* in the *kalām* and philosophical literature. In a way, he supplements al-Kindī on the subject by making explicit what the latter omits<sup>22</sup>.

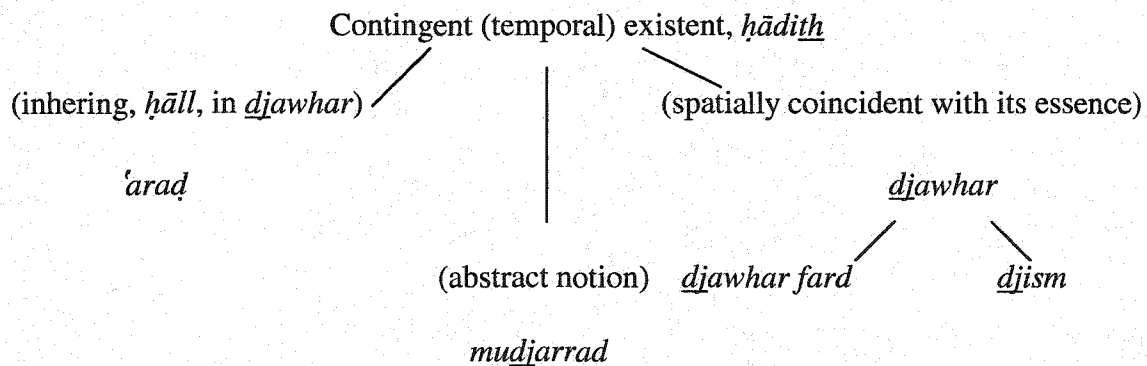
Al-Tahānawī starts with giving an introductory definition of *djawhar*, very similar to that of al-Kindī. *Djawhar* has two general meanings: an existent that subsists by itself; and truth or essence. In both the meanings, *djawhar* is contrasted with accident that has opposite characteristics. Al-Tahānawī proceeds to explain the details of these meanings that are ascribed to the term by the theologians (*al-mutakallimūn*) and the philosophers (*al-ḥukamā’*). The basic definition of the term for the theologians runs as follows:

*djawhar* is part of the contingent existent (*al-mawḍū‘ al-mumkin*); it is temporal, *ḥādith*, and spatially coincident with its own essence (*al-mutaḥayiz bi’l-dhāt*). Accident is that which does not have independent existence, it subsists in *djawhar*, *al-mutaḥayiz bi al-dhāt*. *Djawhar* is not composite. Its place in the relations between the universe (creation), individual existents, bodies and accidents can be better understood from the following scheme.



Substance as understood in this scheme, which according to the theologians (the *veteriores* among them, like Abū al-Hudhayl<sup>23</sup>) reflects the ontological structure of creation, is synonymous with the indivisible part, *al-djuz 'alladhī lā yatadjazza* '. It is also called *al-djawhar al-fard* (atom). A set of brief definitions, quoted by al-Tahānawī, can add to the understanding of the scheme. Substance (= atom) is that from which something else is composed. Body is that which is composed from something else (not from itself). Accident is that the permanence, *baḳā* ', of which is not possible.

Another scheme, according to the *muta'akhkhirūn*, *recentiores* among the theologians, by whom al-Tahānawī probably means the Basrian School of the Mu'tazila, places substance in a somewhat different relation with the created things.



In this scheme, substance is either indivisible, in which case it is called, as in the first scheme, *djawhar fard*; or composite, and then it is body, *djism*. Accident is an attribute, *sifah*, of substance<sup>24</sup>.

This approach to substance by the *recentiores* among the theologians is close to the understanding of substance by the philosophers (*al-ḥukamāʾ*) for whom, as has been shown on the example of al-Kindī, *djawhar* is either *basīṭ* or *murakkab*.

The main feature the philosophers attributed to substance, in contradistinction to accident, as reported by al-Tahānawī, is that substance never happens in a substrate, *mawḍūʿ*, while accident necessarily needs a substrate for its subsistence. Unlike the theologians, the philosophers do not mention indivisibility as its outstanding feature. On the contrary, al-Kindī, for instance, stresses the actual divisibility of all created things, substance included, as I tried to make clear in the Context of Unity.

#### **Dhāt (essence), *mā ʿīyah* (quiddity), *ḥaqīqah* (truth)**

In al-Kindī's usage, these terms appear to be closely related synonyms: all of them denote such ontological aspects of a thing that are in one way or another coincident with the thing itself. *Dhāt* is identical with the individual thing itself (*kullu shayʾ fa-dhātuh hiya huwa*)<sup>25</sup>. *Mā ʿīyah* is the common element of the things that are related to the same genus, since, according to al-Kindī's definition, genus is such a predicate of a multiplicity of specifically different things that informs about their (common) quiddity, *munbiʿ ʿan mā ʿīyah*<sup>26</sup>. It is grasped by intellect, not by the senses, which is evident from al-Kindī's statement that everything which is either perceived sensually (*mā adraḥ al-ḥiss*) or whose *mā ʿīyah* is apprehended intellectually, is one or multiple<sup>27</sup>. The truth (reality) of a thing – and each thing/being has its truth (*kullu mā lah innīyah, lah ḥaqīqah*)<sup>28</sup>, - is the

object of philosophical inquiry, inasmuch as it is that part of the thing through which its sustentation, *kiwām*<sup>29</sup>, is possible.

For al-Tahānawī these terms are close synonyms and he explains them through each other. Essence is that which is validated (*muṣaddaq* 'alayh) as the (common) quiddity (*māhīyah*) of individuals, (*afrād*)<sup>30</sup>. In this definition *afrād* can have two meanings; therefore, essence can have two distinct meanings as well. First, *afrād* can be taken absolutely (*muṭlaqan*) as abstract notions, consequently, essence is understood in this case as an abstract notion. Second, *afrād* can be considered specifically, *naw* 'an, or through their property or differentia, which are equivalent to species. (For al-Kindī, as has been shown in the Predicates context, *khāṣṣah* and *faṣl* too can be used interchangeably with species). In this case, essence is identical with *djawhar*, substance. Finally, essence is that which subsists by itself, *mā yaḳūm bi nafsih*; in other words, it is comparable to an individual thing, which agrees with al-Kindī's definition above. It is also that in which non-essence, *i.e.* accidents and attributes inhere (*mā yaḳūm bih ghayruh*). Logically (grammatically) essence is that which is independent as notion, *al-mustaḳill bi al-mafhūmīyah*, *i.e.* it cannot be known through a predicate, *mā yaṣiḥḥ an yu 'lam bi khabar* 'anh.

The definition of *māhīyah* is reported by al-Tahānawī from different points of view<sup>31</sup>. The logicians, *al-manṭiqiyūn*, define it as that by which the question "What is the thing?" is answered. The theologians and the philosophers define it as that due to which the thing is itself (*mā bih al-shay* 'huwa). In the latter definition the following two meanings of the

*māhīyah* are distinguished: the specific quiddity (*al-māhīyah al-naw'īyah*) which appears in the relation of a genus to its species (*tahakkaka fī al-djins bi al-kiyās ilā al-naw'*); and the particular quiddity, *al-māhīyah al-djuz'īyah*, which is the thing itself.

Al-Tahānawī sums up this set of definitions of quiddity (he uses the form *māhīyah*, mentioning that grammatically, the form *mā'īyah*, the one al-Kindī prefers, is also possible) stating its synonymy with the other two: *dhāt* and *ḥaḳīkah*. There is a slight nuance, though: the two latter terms can usually be used interchangeably with *māhīyah* when the external existence of *māhīyah* is taken into consideration. What the external existence of a thing means becomes clear from al-Tahānawī's division of intelligibles into primary and secondary intelligibles. The primary intelligibles are such as exist in individual existents, *a' yān* (to put it more clearly, the primary intelligibles are being, they constitute outer existence, *al-wudjūd al-khāridjī*); unlike them, the secondary intelligibles exist only in the intellect. Thus, al-Tahānawī wants to say that essence, quiddity and truth are secondary intelligibles, and in this respect, they can be considered as accidents of being(s).

A contradiction arises: how can *māhīyah* have an external existence while being a secondary intelligible? Al-Tahānawī's attempts to resolve it by mentioning two kinds of *māhīyah*: the true quiddity (*al-māhīyah al-ḥaḳīqīyah*) which is permanent (*thābitah*) in existence and thus is identical with an individual existent itself (*huwīyah*)<sup>32</sup> and the conventional quiddity (*al-māhīyah al-i'tibārīyah*) which subsists due to the convention of the intellect (*kā'inah bi-ḥasab i'tibār al-'aql*). This latter kind of *māhīyah* and specific

quiddity are the same. Of these two, only the latter can be said to be an accident of being. Still, to be fully consistent, al-Tahānawī should have divided essence and truth into similar subdivisions, since all three terms, as he asserts, are synonyms. He does not do that, and the contradiction remains. The root of the problem, I think, lies in that the division of intelligibles into primary and secondary is unsatisfactory in view of the existence of God as ultimate reality, which all the Islamic thinkers, al-Tahānawī included, uphold, for such a division inevitably ascribes to an individual being (*huwīyah*) independent existence. For al-Kindī this problem never arises, not only because essence, quiddity and truth are perceived only by the intellect, which can be deduced from the fact that they are objects of the philosophical inquiry, but also because the division into primary and secondary intelligibles is impossible for him owing to the fact that in his view, all individual beings derive their existence from the True One, and thus, are called beings only metaphorically.

***Wudjūd (existence), mawdjūd/yūdjād (existent/“to be” used as a copula)***

In al-Kindī’s usage, *wudjūd* is a homonym: it can mean either existence or human perception with its subdivisions (الوجود الإنساني وجودان)<sup>33</sup>. The latter meaning I shall discuss among the Epistemological terms.

*Wudjūd* for al-Kindī means unqualified existence. Usually he uses this term to assert that something is the cause of existence of something else, as in the following statement, where the Truth is asserted to be the cause of the existence of each thing (*wa-‘illat wudjūd kull shay’ wa-thabātuh al-ḥakk*)<sup>34</sup>. Another example of this usage occurs in the discussion of the impossibility of a thing to be the cause of its own essence<sup>35</sup>. There al-

Kindī says that in order that the relation between the thing and its essence be valid for investigation, they both (the thing and its essence) must be predicated of something that has a kind of existence (إنما هما مقولان على شيء له وجود ما)<sup>36</sup>. The same meaning (that of unqualified existence) *wudjūd* has in the definition of the essential (*al-dhātī*): the essential is that through whose existence (*bi-wudjūdih*) the sustention of the generation of a thing (قوام كون الشيء)<sup>37</sup> is possible.

*Mawdjūd*, a derivative of *wudjūd* (or, to be more accurate, the passive participle from the root *w-dj-d*) is used by al-Kindī to denote that something is or is not under certain conditions. Thus, in the exposition to the effect that body, motion and time are concomitants and none of them precedes the other, he says that if there is body (*maudjūd*), there is (also) motion (*mawdjūdah*)<sup>38</sup>. In the same exposition, *maudjūd* is used in this sense interchangeably with *yakūn* (is), as in this phrase: “either there is no motion at all, or it is not existent but can become existent” (تكون حركة بثة إما ألا تكون وممكن أن تكون) (إما ألا)<sup>39</sup>. Here, the omitted nominal part of the predicate is implied to be *mawdjūdan* (existent). From this example, it can be inferred that in such instances *mawdjūd*, due to its synonymy with *yakūn*, has not exactly, or not exclusively, the meaning of “existent”. Rather, it used as a substitute for the copula (like Latin *esse*), which is absent in the Present Tense in the Arabic language<sup>40</sup>. Another characteristic example of this usage is in the following statement of al-Kindī (I quote it in J. Jolivet’s translation which accurately renders this shade of meaning, distinguishing between the meanings of *mawdjūd* and *innīyah*): “nécessairement, le vrai est, pour des existences qui sont”<sup>41</sup> (الإنبيات) موجود إذا. Here, *mawdjūd* is rendered by the copula *est, sont* (though it does not appear as such at first glance due to the omission of the nominal part of the

predicate), in contradistinction to “*existences*” (existents) by which *al-innīyāt* is translated. That this usage of *mawḍjūd* (Passive Participle) / *yūḍjad* (the Passive Voice of the Present Tense) was rather common in the early period of Arabic philosophy is corroborated by an example given by al-Tahānawī in the *Kashshāf*<sup>42</sup> : it seems that it was accepted to say, for example, “*Zayd yūḍjad kātiban*” (Zayd is writing). Here, *yūḍjad* is used in place of the lacking copula in order to distinguish between the subject of the sentence (Zayd) and the nominal part of its predicate (*kātiban*). As al-Tahānawī says, *wuḍjūd* is used here (*yūḍjad*) in lieu of a connective word (*al-ribāṭ*)<sup>43</sup>. Though such constructions with *yūḍjad/mawḍjūd* are artificial in the Arabic language, and are never used outside philosophical literature, al-Tahānawī tries to explain the given example in terms of Arabic grammar. Evidently, he cannot do it in the way common to the grammarians, because this sentence would not fit into the ordinary division for nominative sentences *mubtadaʾ/khabar*. Therefore, al-Tahānawī’s explanation is a curious mixture of grammar and philosophical terminology, called upon to account for this unconventional usage. Thus, this construction, in al-Tahānawī’s wording, is “an attribution (*nisbah*) of existence (*wuḍjūd*) to the subject (*al-mawḍūʿ*), i.e. “Zayd”, through the predicating (*maḥmūl*) of an external (i.e. other than Zayd) quiddity (*al-māhīyah al-khāridjīyah*), i.e. “writing”<sup>44</sup>.

What is striking in this explanation is that the two distinct meanings of the verb (eg. εἶναι in Greek or *esse* in Latin), which in the Indo-European languages serves both to denote being/existence and to differentiate, as a copula, between the subject and the predicate of a nominal sentence, and of which *yūḍjad/wuḍjūd* is an Arabic equivalent, are conflated

here. Primarily, I conjecture, the reason for this usage of *mawdjūd/yūdjad* was the necessity to grammatically differentiate between the subject of the proposition and the nominative part of the predicate, which could be otherwise easily mixed up with the subject or taken for its attribute, thus causing a problem for the logicians. But then, somehow, the original meaning of “being” was not totally erased from the significance of *mawdjūd*, even when used as a copula. The reason for this may be the fact that literally *mawdjūd* means “is found”, *i.e.* grammatically, it already implies “to be”.

In al-Kindī’s language, however, the nominal part of the predicate is in most cases omitted, which makes it difficult, as I mentioned above, to recognize at first glance *mawdjūdlyūdjad* as a copula. Such is the last part of the sentence under consideration : “*li-innīyāt mawdjūdah*”. Here, as in most similar instances, the nominal part of the predicate can be restored. Indeed, as I tried to show in the Context of Ontology, existence for al-Kindī is either true, *bi’l-ḥaqq*, or metaphorical, *bi’l-madjāz*. Thus, if this consideration be taken into account, the full meaning of the phrase will appear as “for the existences that are (exist) metaphorically”. The structure of the phrase, restored in this way, is analogous with that of the example explained by al-Tahānawī “*Zayd yūdjad kātiban*”.

*Wudjūd* for al-Kindī, as I mentioned above, means existence generally speaking, that is such unqualified existence that does not differentiate between the existence of an accident and the existence of a differentia, for instance. Nevertheless, al-Kindī makes a very brief notion of several kinds of existence (apart from his mainstream division of existence, along with unity, into true and metaphorical existence). He mentions individual existence, or, to translate it more accurately, existence in itself (*wudjūd fī ‘aynih*), natural existence

(*wudjūd ṭabīʿī*) and accidental existence (*wudjūd ʿaraḍī*)<sup>45</sup>. These kinds of existence are referred to by al-Kindī in his argumentation for the multiplicity of the soul. The soul, as has been shown in the Context of Epistemology, carries out both sensory and intellectual perceptions. Every thing apprehended by the soul either exists in itself as individual existence (*wudjūd fī ʿaynih*)– this is the case when it is perceived by the soul through the senses,- or as natural existence (*wudjūd ṭabīʿī*)- and in this case it is perceived by the soul through intellect. *Wudjūd fī ʿaynih*, is not the same, as might be at first thought, as *innīyah*, because the latter (as explained above) is individual existence perceived intellectually. *Wudjūd fī ʿaynih* is closer to the human being, for the senses, as al-Kindī says, “belong to us from the beginning of our development” (هي لنا منذ بدء نشوئنا)<sup>46</sup>, and farther from nature, because it is unstable, “due to the motion and fluctuation of that which we contact” (غير ثابت لزوال ما نباشر)<sup>47</sup>. On the other hand, *wudjūd ṭabīʿī*, which, as al-Kindī says, is closer to nature, because it is stable, and farther from the human being, exists as such only in our thought. The soul is multiple not only because it perceives changeable objects, subsumed under *wudjūd fī ʿaynih*, but also because the soul passes, in its apprehension, from certain forms (*ṣuwar*) of things to others, which exist as natural existence.

As for *wudjūd ʿaraḍī*, it is not, as might be thought, the existence of accidents, but the conventional existence of a thing, through which it exists in our speaking or writing, because speaking and writing, as al-Kindī implies, must be learned, and as such are

accidental for human nature (*i.e.* these capacities may not exist and human nature would be in its essence the same).

Al-Tahānawī, quite in accordance with al-Kindī, but for some changes in terminology, divides *wudjūd* into three subdivisions: existence in itself or external existence (*al-wudjūd al-‘aynī* or *khāridjī*), which corresponds to al-Kindī’s *wudjūd fī ‘aynih*; intellectual existence (*al-wudjūd al-dhihnī*), which is equivalent to al-Kindī’s natural existence; and existence in speech and writing (*al-wudjūd al-lafzī wa al-khaṭṭī*), which is the same as al-Kindī’s accidental existence<sup>48</sup>. The latter, al-Tahānawī adds, is called existence only metaphorically, because speaking and writing do not contain any individuation (*tashakhkhuṣ*) or quiddity of a thing (or of a human being, as runs al-Tahānawī’s example), but only its name (in case of speaking) and its graphic image (in case of writing). For al-Kindī, quite unlike al-Tahānawī, quiddity is not the criterion by which existence could be described as true or metaphorical, and all the three subdivisions of existence remain for him metaphorical, as I have mentioned above.

### ***Kawn* (being/generation/being-in-time), *fasād* (corruption)**

The key word of this pair of terms is *kawn*; which is why it is more convenient to start the discussion from its analysis. The more so in that *fasād* and *fāsid* rarely stand in al-Kindī’s usage unaccompanied by *kawn* or *kā’īn*.

To begin with, *kawn* is translated not in the same way by J. Jolivet and A. Ivry: while the former translates it alternatively as “l’être” (being) or “génération”, the latter consistently renders it as “generation” throughout his translation of the *Letter on the First Philosophy*. Thus, the following phrase of al-Kindī: “ليس يمكن أن يكون شيء علة كون ذاته”<sup>49</sup> is translated

by J. Jolivet as “il est impossible qu’une chose soit la cause de l’être de son essence”<sup>50</sup>; the same phrase in A. Ivry’s translation sounds as “it is not possible that something should be the cause of its own generation”<sup>51</sup>. J. Jolivet’s translation is the more precise, for A. Ivry, apart from blurring the very important point, namely the relation of a thing to its essence (he omits the word *essence* from his translation altogether), which is central in this argumentation of al-Kindī, apparently presents the causal relation as a creational action. This might not be true: first, because it is impossible for al-Kindī to suppose that something other than the First Principle can cause generation, as is perfectly clear from the very beginning of the *Letter*. Second, because when al-Kindī wants to stress that something is generating and something else is generated, he uses the correlative terms *mu’aththir/mu’aththar*, as I have discussed above, or *mukawwin/mukawwan*. Even so, for several reasons, which I shall explain later, in my Contextual Analysis of the *Letter*, I have preferred A. Ivry’s translation of *kawn* as generation in this instance.

For another phrase of al-Kindī, “فلا يخلو من ان يكون جرم الكل كوناً عن ليس او لم يزل”<sup>52</sup>, the following translations are given by J. Jolivet and A. Ivry. The first translates it as follows: “alors de deux choses l’une: ou bien le corps de l’univers est un être venu de non-être, ou bien il est éternel”<sup>53</sup>. The second again translates here *kawn* as generation: “(either) the body of the universe would have to be a generation from nothing or eternal”<sup>54</sup>. In this instance, A. Ivry’s version appears to be clearer than that of J. Jolivet because it reflects more distinctly the concept of *creatio ex nihilo*, which, as is known, al-Kindī upheld. Nonetheless, I would not discard J. Jolivet’s translation as inaccurate.

Al-Tahānawī well explains in *al-Kashshāf*, in my opinion, why both variants of being and generation can be used for al-Kindī’s *kawn*. His definition runs as follows: “*kawn*, in the

writings of the philosophers ( *'inda al-ḥukamā'* ) is the temporal occurrence (*ḥudūth*) of a specific form (*ṣūrah naw ṭyah*)”<sup>55</sup>. Not the temporal occurrence of any form (*ṣūrah*), as al-Tahānawī stresses further, can be called *kawn*. For if it is only the physical form (*al-ṣūrah al-djismīyah*) of a thing that occurs, with the preservation of its matter ( *'alā hayūlā wāḥidah*), the temporal occurrence of such a form is not called *kawn*, but rather a change (*tabaddul*).

No doubt, the *kawn* of al-Tahānawī’s definition means the same as Aristotle’s substantial change or generation (γένεσις). (Cf. also al-Kindī’s definition: the change of the substance (of a thing) is (called) either generation or corruption (*tabaddul djawharih huwah al-kawn wa'l-fasād*)<sup>56</sup>.

The most important thing, to my mind, in al-Tahānawī’s definition of *kawn* is that it is viewed as a temporal occurrence (*ḥudūth*). Al-Kindī too, on several occasions, emphasizez its temporal character (as well as that of corruption), as in the following instance: “فإن من بدء الكون والفساد الى نهاية الكون والفساد منقسماً بقسم الزمان الذي فيه الكون والفساد”<sup>57</sup> (from their beginning, generation and corruption are divisible by way of time they are in). This divisibility is due to the fact that *kawn* and *fasād* are kind of motion: “الحركة: نقلة... او ريو او نقص او كون او فساد”<sup>58</sup> (motion is either locomotion, or growth, or diminution, or generation, or corruption). Since body, motion and time are concomitants, wherever there is body, there must be motion (فإن كان جرم كانت حركة)<sup>59</sup>, and wherever there is motion, there must be time, because time is a quantity (الزمان كمية)<sup>60</sup> and as such it is segmented through motion (مفصول بالحركة)<sup>61</sup>.

Though in J. Jolivet's translation of the *Letter* it appears that *kawn* is a homonym which means both being and generation (the latter meaning is mainly due to the fact, I think, that *kawn wa-fasād* are used respectively by al-Kindī to render Aristotle's γένεσις καὶ φθορά<sup>62</sup>, which often come together in the *Metaphysics*), it does not appear that al-Kindī is fully conscious of these two distinct meanings of *kawn*. In the following phrase, from a passage where al-Kindī speaks about generation being one of the kinds of motion, for example, *kawn* can be read either as "being" or as "generation"<sup>63</sup>: "*fa-idhā lam yasbiḵ al-djirm kāna dhātah, fa-idhan lam yasbiḵ kawn al-djirm al-ḥarakah battatan*" ("if body does not precede (its own generation, *kawn*, as understood from the preceding sentence), thus it is its essence, and in this way the being/generation (*kawn*) of body is never preceded by motion"). In this context J. Jolivet translates *kawn* now as generation, now as being, which obliges him to make a clarifying remark to the effect that "le mot *kawn* a dans ce contexte deux sens, soit celui, le plus usuel, de *être*, soit le sens aristotélicien de *génération*"<sup>64</sup>. These distinctions seem to be not important for al-Kindī, for otherwise, he would have made his entire discussion of the impossibility of body precede its *kawn* split into two parts: first, to prove that body does not precede its being, and second, that body does not precede its generation. However, this is not the case, that is why J. Jolivet's distinguishing the two meanings of *kawn* in al-Kindī's usage seems to me somewhat far fetched.

More important, in my view, is the difference between the meanings al-Kindī ascribes to *wudjūd* and to *kawn*. Even if there is no explicit opposition of these terms in the *Letter*, it can be inferred from al-Kindī's usage of them that some of their characteristics are opposite to each other. For one thing, when speaking about the existence/being of the

universe, or body taken in the physical sense, al-Kindī steadily uses the term *kawn*, and never *wudjūd*, although, as has been shown above, they both can signify existence or being. *Kawn djirm al-kull*, or *kawn al-djirm*<sup>65</sup> are the only combinations used in such instances. On the other hand, if a thing or a body is taken as an abstract notion, al-Kindī uses *wudjūd* rather than *kawn*. Thus, in the phrase already quoted in the section under *Wudjūd*, al-Kindī says that the cause and its effect (*al-‘illah wa’l-ma’lūl*) are predicated of a thing (*shay’*) that has a kind of existence (*lah wudjūd mā*). As cause, effect and predication are abstract notions; *shay’* here is used abstractly, not in the sense of a physical body, and therefore *wudjūd* instead of *kawn* is used in this context. As J. Jolivet remarks in one of the notes to his translation of the *Letter*, *kawn* means “l’être de la chose engendré ou en devenir”, whereas *wudjūd* means “l’être de l’universel”<sup>66</sup>.

Taking all this into consideration, I would suggest that the most precise equivalent in English for al-Kindī’s *kawn* would be “being-in-time”. However, as this sounds a bit clumsy and would obscure the understanding of some passages, in my Contextual Analysis of the *Letter* I preferred to keep A. Ivry’s translation of *kawn* as generation, all the more so since the term generation already implies being-in-time. And as al-Kindī uses *kawn* without any specification as to whether it means being or generation in such-and-such a case, following A. Ivry, I have used “generation” for *kawn* even in the instances when J. Jolivet renders it as “l’être”.

It should be noted, however, that this distinction between *kawn* and *wudjūd* is peculiar to al-Kindī, for al-Tahānawī quotes instances of the interchangeable usage of these terms in some authors<sup>67</sup>. He says, for example, that in the works of the Mu’tazila (*‘inda’l-*

*mu 'tazilah*) as well as in general in the works of the theologians ( *'inda'l-mutakallimīn*), *kawn* is a synonym (*murādif*) for *wudjūd*. He refers to some works by the Ash'arites (he does not specify them) in which the terms permanence (*al-thubūt*), being (*al-kawn*), existence (*wudjūd*) and actualization (*al-tahakkuk*) are used as synonyms. Of these terms, al-Kindī never mentions *tahakkuk* at all. As for *thubūt*, which al-Kindī spells as *thabāt*<sup>68</sup>, it occurs seven times in the *Letter*, mostly as a synonym to “sustentation” (*kiwām*) in the passages dealing with the relation of a thing to its essence. The most characteristic example of this usage is the following phrase: “(*al-dhāt*) *huwa alladhī bi-wudjūdihi ḳawām kawn al-shay' wa thabātuh* (the essential is that by whose existence there is sustentation and permanence of a thing)”<sup>69</sup>.

Al-Tahānawī says nothing about what meaning the philosophers ascribe to the term *kawn*; but based on the material of the *Letter on the First Philosophy* by al-Kindī, it can be surmised that the usage of *kawn* constitutes one of the important differences between the technical vocabulary of the theologians and that of the philosophers.

The term *fasād* occurs mainly in combination with *kawn* and is a translation of Aristotle's φθορά, corruption. When speaking about the characteristics of the eternal, al-Kindī defines *fasād* as follows: “the eternal does not undergo corruption, because corruption is a change (*tabaddul*) of an attribute/or predicate (*maḥmūl*), not of the first substrate (*al-ḥāmil al-'awwal*)”<sup>70</sup>.

#### **Other important ontological terms used in the *Letter***

Most of the other ontological terms that occur in the *Letter* are proper only to the vocabulary of al-Kindī. Al-Tahānawī does not mention them in the *Kashshāf*, either because other authors, besides al-Kindī do not use them (eg. *tahawwin*, existentialisation or “coming to be” in A. Ivry’s translation)<sup>71</sup>, or because they became obsolete shortly after his time. Of these, the most frequently used are the derivatives of the root *a-y-s* (أيس), such as *aysa* (J. Jolivet prefers reading it as *aysu*), which means “an existent”; *aysīyah* (existence), *ta’yīs* (existentialisation). The root *l-y-s* occurs in two forms: *laysa*, which means “non-existence”; and (according to J. Jolivet’s reading) *laysu*, which means “non-existent”.

The term *aysa* first appears in the form of *al-aysu* (very seldom used by al-Kindī in the *Letter*) in the translation of the *Metaphysics* by Aṣṭāt, carried out in the translation circle of al-Kindī. It was meant to be an equivalent of Aristotle’s τὸ τί ἔστιν (literally, “that which is”, *quod quid est*)<sup>72</sup>; τὸ μὴ εἶναι and τὸ μὴ ὄν (a non-existent) were translated by him as *mā laysa huwa*, for which al-Kindī uses *laysu* or *laysa*.

It seems that the derivatives from the root *a-y-s* were never, or extremely rarely, used outside the circle of al-Kindī. Not only does al-Tahānawī say nothing about this term or its derivatives; it is not used once in the *Uthūlūdīyah*; nor was it used in other translation circles, contemporaneous to that of al-Kindī. Ishāq ibn Ḥunayn in his translation of Aristotle’s *De Anima*, employs the term *shay’* for οὐσία (a being)<sup>73</sup>. Nor does *’aysa* happen in Themistius’ paraphrase of Book XII of the *Metaphysics*, the real translator of which was probably the same Ishāq or Abū Bishr Mattā<sup>74</sup>.

The theologians in the 9<sup>th</sup>-10<sup>th</sup> centuries also hardly ever use this term, for R. Frank does not mention it in his list of the technical terms of the Basrian School of the Mu'tazilah<sup>75</sup>.

Despite its rarity, *aysa*, as stated in the *Lisān al- 'Arab*<sup>76</sup>, is originally a pure Arabic word, and the medieval linguists were aware of this. Literally it means *ḥaythu huwa*, when speaking about the existence of a thing; accordingly, *laysa*, which, in the view of the medieval linguists al-Khalīl [d. 791 or 786] and al-Farrā' [d. 822], is composed of *lā* and *aysa*, is the negative of *aysa*, literally meaning *ḥaythu lā huwa*<sup>77</sup>.

Thus, al-Kindī (and Aṣṭāt) employed not a foreign word, as it might have been judged from its rarity, but an old Arabic one, unusual as it might have sounded even for many of his contemporaries. This fact, I think, accounts for its frequent usage in the *Letter* and for its numerous derivatives, which al-Kindī coins rather freely to create synonyms to already existing and commonly accepted terms in the milieu of the philosophers and the theologians.

Abū Rīdah is of another opinion and disagrees with the medieval scholars. He claims that since '*aysa* in al-Kindī's vocabulary is synonymous to *wudjūd* or *mawdjūd*, the true origin of the term should be sought in the language of Aristotle, because, as he says "قد يتبادر للعارفين بالاصطلاح الفلسفي عند اليونان أنها (i.e. *aysa*) ترجع إلى كلمة οὐσία"<sup>78</sup>. As this argument is based on nothing but an accidental phonic resemblance between the two words, I would rather stick to the explanation of the term given in the *Lisan al- 'Arab*, no other reasonable explanation having been offered, to my knowledge, elsewhere.

Of the derivatives from the root *a-y-s*, the most frequently used in the Letter are *aysu* (occurring also a few times with the article, *al-aysu*) and *laysu*. *Aysīyah* and *ta'yīs* occur only once, and that in a combination with each other; and *laysa* in the sense of non-existence occurs three times.

For the first time *aysu* occurs in the definition of the primary substratum (*al-ḥāmil al-'awwal*, which corresponds to Aristotle's ὑποκείμενον or οὐσία in the sense of primary being): the primary substratum, which is *al-aysu*, does not change (*lā yatabaddal*). A. Ivry and J. Jolivet translate *al-aysu* in this instance differently: the first renders it as “being”, while the second prefers to preserve in his translation the original meaning of the term as it was first used by Aṣṭat, and translates it as “I'existent”. Abū Rīdah in a note to this passage remarks that *al-aysu* here means *al-wudjūd*<sup>79</sup>, that is being.

Now, if R. Walzer's remark that Aṣṭat translated by *al-'aysu* Aristotle's τὸ τί ἔστιν is correct, then *al-aysu* should have rather been translated in the above definition according to one of the meanings of this Greek term. “Being”, or “primary being” is only one of them, it can also mean “essence” or “quiddity” (“existent” is not among its meanings)<sup>80</sup>.

The whole passage under consideration reads as follows:

*al-fasād innamā huwa tabaddul al-mahmūl, lā al-ḥāmil al-awwal, fa-ammā al-ḥāmil al-awwal alladhī huwa al-aysu, fa-laysa yatabaddal, li-anna al-fāsid laysa fasāduh bi-ta'yīs aysīyah.*

Three terms here can be rather generally translated as “being”, as A. Ivry did in his translation: “perishing being but just the changing of the predicate, not of the primary substratum; as for the primary substratum, which is being (*al-aysu*), it does not change,

for the perishing of a perishable object does not involve the being (*ta 'yīs*) of its being (*aysīyah*)”<sup>81</sup>.

It would be strange, if al-Kindī used in one short paragraph three different words for exactly the same notion. His general stylistic abstruseness cannot account for it, because whenever al-Kindī lines up several synonyms in a single phrase, they do not have the same signification, but carry different shades of meaning in order to elucidate more fully the purport of the sentence or the passage. A. Ivry’s translation fails to preserve the original meaningfulness of al-Kindī’s phrase; J. Jolivet does better, and gives precise equivalents for *ta 'yīs* and *aysīyah*: “existentiation” and “existence” respectively<sup>82</sup>. The

problem arises with his translation of *al-aysa* as “I-existent”, for Aristotle’s τὸ τί ἔστιν does not have this meaning<sup>83</sup>. Certainly, one can translate *al-aysu* as being, as A. Ivry did, and the two other terms as “existentiation” and “existence”/or “being”, as in J. Jolivet’s translation. That will be a rather accurate translation, though there will be again two words, *al-aysu* and *aysīyah*, to denominate being.

On my part, I would offer another version of this passage, which seems to me more adequate to what al-Kindī implies here. First, I would like to draw attention to the fact that the passage starts with the definition of *fasād* (corruption) in terms of *maḥmūl*: corruption is a change (*tabaddul*) of a predicate (*al-maḥmūl*), not of the primary substratum. This is A. Ivry’s translation. *Maḥmūl*, however, can mean not only predicate but accident as well, and J. Jolivet in his variant prefers this meaning: “la corruption n’est rien d’autre que le changement de l’accident, et non du sujet premier”. Now, the primary substratum, which is *al-aysu*, must have the nature opposite to that of *maḥmūl*, accident.

That can be only essence, and this meaning is found among other meanings of Aristotle's τὸ τί ἔστιν. The whole passage in my reading is as follows:

Corruption is the change of an accident, not of the primary substratum; as for the primary substratum, which is essence (*al-aysu*), it does not change, for the corruption of an object which is subject to corruption is not (or does not involve) the existentialization of its being.

Thus, the essence of a thing cannot be corrupted, because the act of corruption would mean an existentialization of its being. This does not appear very clear until one looks into how al-Kindī classifies different kinds of action in his treatise *On the First True Perfect Agent and on the Imperfect Agent, Called Thus Metaphorically*<sup>84</sup>. There al-Kindī says that true primary action (*al-fi 'l al-ḥakḳī al-awwal*) is to produce beings from non-being (*ta 'yīs al-aysiyāt min laysa*). This action belongs exclusively to God: “and this action, it is evident, is the property of God Almighty (*wa hadha'l-fi 'l bayin annahu khāṣṣat Allāh ta 'ālā*)”; and to no one or nothing else: “verily, the existentialization of beings out of non-being is not proper to anyone beside Him (*fa-inna ta 'yīs al- 'aysiyāt 'an laysa laysa li-ghayrih*)”. It is this kind of action, namely, *ta 'yīs*, which is called *ibdā'*: “and it is specified by the name of *ibdā'* (*huwa al-makḥṣūṣ b'ism al-ibdā'*)”. Essence is not subject to corruption because, as can be concluded from the above exposition, its corruption would mean a creative process, and in al-Kindī's philosophy, only God is able to perform such an act.

## The Epistemological Terms

The epistemological terms can be divided into two main groups: the terms that signify perception and its kinds – which are three: *wudjūd* (perception properly speaking), *ḥiss* (sensation or sensory perception) and *tawahhum* or *wahm* (imagination, the last derivative of the root *w-h-m* can also have a derogatory connotation of a whim); and the terms that denote the predicates—which are ten in number; five of them are borrowed by al-Kindī from *Arbor Porphyrii*: *djins* (genus), *naw’* or *ṣūrah* (species), *khāṣṣah* (property), *faṣl* (differentia), *‘araḍ* (accident); while the other five are his own: *kull* (all), *djamī’* (whole), *djuz’* (part), *ba’ḍ* (portion) and *shakhs* (individual).

The reason I include the names of the predicates with the epistemological terms is the following. For al-Kindī, cognition (*al-‘ilm*) is a process of attaining the true nature of things. As he says in *On Definitions*: “*al-‘ilm - wijdān al-ashyā’ bi-ḥaqā’ikihā*” (“cognition is attaining things according to their true nature”)<sup>85</sup>. However, the true nature of things can be grasped only with the help of the predicates. This process is described in a detailed way by al-Kindī at the beginning of the *Letter*: “when we attain the knowledge/cognition of the matter (*‘unṣur*) of an existent, we thereby attain the knowledge of its genus (*djins*); and when we attain the knowledge of its form (*ṣūrah*) we thereby attain the knowledge of its species (*naw’*); knowledge of the specific difference (*faṣl*) being subsumed within the knowledge of the species. When, therefore, we attain full knowledge of its matter, form, and final cause, we obtain full knowledge of its definition (*ḥadd*), and the true nature of every defined thing is in its definition”<sup>86</sup>. The

process of cognition, therefore, appears to consist for al-Kindī in giving definitions in terms of the predicates.

## Perception and its kinds

### a) *wudjūd* and *widjdān*

The most general term for perception, and that, which occurs most frequently, is *wudjūd*. Another form of the same root *w-dj-d*, *widjdān*, which differs from the signification of *wudjūd* in that it represents perception as a process, occurs only two times in the *Letter*<sup>87</sup>, but is not uncommon in al-Kindī's other treatises.

I have dwelt at some length on the kinds of *wudjūd* and the objects of their apprehension in the Context of Epistemology in Part I. Here I have only to add that, strictly speaking, *wudjūd al-ḥawāss* (sensory perception) is excluded by al-Kindī from the cognitive process, or at least its role is much less significant than that of *wudjūd al-ʿaql* (intellectual

perception). Indeed, he says: “فإذن كل طبيعي فذو هيولى . فإذا لم يمكن أن يستعمل في”

”وجود الأشياء الطبيعية الفحص الرياضي إذ هي خاصة ما لا هيولى له”<sup>88</sup> (“Therefore every physical thing is material and hence it is not possible for mathematical investigation to be used in the perception of physical things, since it is the property of that which has no matter”).

Here, “mathematical investigation” should be understood in a broad sense as one dealing with abstract notions; and since defining things in terms of the predicates is abstract, the true cognitive process belongs to the domain of intellectual perception.

The term *wudjūd* is not commonly used for perception in medieval Arabic philosophical literature – al-Tahānawī does not mention this meaning in the *Kashshāf* under the heading of *Wudjūd*<sup>89</sup>. He speaks briefly, though, about *widjdān*<sup>90</sup>, and among several meanings he

attributes to this term, one describes it as inherent powers/capacities of the soul (*al-naḥs wa-ḥuwāhā al-bāṭinah*). These capacities seem to be of a purely intellectual character, for al-Tahānawī completes the exposition of this meaning of *widjdān* in the following way: “According to the well-known definition (‘*alā’l-ḥawl al-maṣḥūr*’), it (*widjdān*) is that which everyone finds in his soul as purely intellectual (‘*aḥlīyan ṣirfan*’), like the states of his soul (*ka-aḥwāl naḥsih*), or as perceiving (*mudrikan*) by the intermediary of an inherent power/capacity (*bi-wasāṭat ḥuwah bāṭiniyah*)”. Al-Tahānawī does not provide sufficient clarification for a detailed understanding of this exposition. Nevertheless, it is clear that *widjdān* means intellectual perception, not only because it is “purely intellectual” but also because “*mudrikan* (perceiving)” is the *nomen actionis* of *idrāk*, which, in its turn, is a synonym of ‘*ilm*, intellectual knowledge.

Al-Kindī does not use the term *idrāk* in the *Letter* (he uses it in several other treatises), and a consideration of it is beyond the scope of the present work. I shall just give al-Tahānawī’s definition of it, because it shows its intellectual character, and, also, involves some terminology proper to al-Kindī. “*Idrāk* is an intellectual image (*ṣūrah ‘inda’l-‘aḥl*) appropriated from a thing (*ḥāṣilah min al-shay’*) and which is more general (*a ‘amm*) than this thing being taken either abstractly (*mudjarradan*) or materially (*māddīyan*), as a particular (*djuz ‘īyan*) or a universal (*kullīyan*) (notion)”<sup>91</sup>.

For al-Kindī (though it is difficult to make a conclusion on the base of his scanty usage of this term in the *Letter*) *widjdān* is likely to mean not exclusively intellectual perception, but such a sensory or an intellectual kind of perception, which is viewed as a process.

That is why J. Jolivet prefers to render this term not by a noun, but either by a participle or an infinitive<sup>92</sup>. The first instance where *widjdān* means a process of sensory perception reads as follows: “(the sensory object) is very close to the perceiver (*al-ḥāss*), being perceived by the sense/“étant perçu par le sens” (*li-widjdānih bi-l’ḥiss*) with the contact of the sense with it (*ma’ mubāsharat al-ḥiss iyāh*)”. A. Ivry translates here *widjdān* as “perception”<sup>93</sup>.

In the second example, *widjdān* means an intellectual process through which scientific *quaesita* are obtained: “*wa in khālafnā dhalik* (i.e. the proper method in our scientific research), *akhta’nā aghrādanā min maṭālibinā wa ’asura ’alaynā widjdān maḥṣūdātina*”.

J. Jolivet renders it by an infinitive: “si nous nous en écartons nous manquerons le but de nos recherches et il nous sera difficile de trouver (*widjdān*) ce que nous nous proposons”.

A. Ivry, here as well, translates it as “perception” and the final part of this passage runs as follows in his translation : “we will miss the objectives of our pursuits, and the perception (*widjdān*) of our intended objects (*maṭālibinā*) will become difficult”.

In both examples, J. Jolivet’s translation is more precise, for it preserves that shade of meaning of *widjdān* as a process, which A. Ivry’s version fails to do.

Finally, I think it worth mentioning that al-Kindī too, as al-Tahānawī does in the *Kashshāf*, refers to perception as “power/capacities of a perfect soul (*kuwā’l-nafs al-tāmmah*)”. *Kuwah*, similarly to *wudjūd* and *widjdān*, can mean either “intellectual perception/capacity”, when the object of its apprehension is genera or species, because the latter do not fall under the senses (*ghayr wāḳi’ah taḥt al-ḥawāss*); or “sensory perception”, when its object is a kind of representation in the soul of an object

apprehended by the senses (*"fa-kull mutamaththil fī-l'naḥs min al-mahsūsāt fa-huwa li-lkuwat al-musta'milah al-hawāss"* ("every sensible object represented in the soul belongs to the faculty/capacity which employs the senses").

**b) ḥiss, tawahhum/wahm**

*Ḥiss* means sensory perception in general; I have already mentioned its role in the process of cognition and its relation to the intellect in the Context of Epistemology above. Here I shall speak about one of its functions, which stands aside from the mainstream of the epistemological process as given by al-Kindī and which therefore has not been mentioned in Part I.

Like Aristotle, al-Kindī is faced with the same problem in his epistemological theory : how can a material object be perceived as an integral whole? Each object has different qualities that require different senses for their apprehension : color requires sight, sound requires hearing, etc. Nevertheless, each human being in his perception forms holistic images of material things around him in which all the qualities perceived are somehow united. It is obvious that these holistic images cannot be produced by any of the five senses taken separately, for sight, for example, can perceive only the color of a given object, while its other qualities remain unperceived by it. Nor can all the senses put together form a holistic image, because each of them forming an image of a separate quality, the perception of a material object would be desintegrated into a multiplicity of images.

That perception of material things requires some other sense besides the five physical senses is especially clear in case of the so-called common sensibles. The common

sensibles (τὰ κοινά in Aristotle's terminology) are such things that “ἐκάστη αἰσθήσει αἰσθανόμεθα κατὰ συμβεβηκός (we perceive incidentally by each sense)”<sup>94</sup>. Such are motion, rest, shape, magnitude, number and unity. One object can be incidentally perceived by touch and sight, for instance, or two sounds by hearing, but neither sight nor touch nor hearing can perceive “one” or “two”. Nor can an object that requires all the senses for its perception can be judged by them as being a unity, for “unity” does not fall under the perception of any of the five senses.

Aristotle resolves this problem by introducing a sixth sense, which he calls the “common sense”, ἡ κοινὴ αἴσθησις. It is the general perceptive faculty of the soul which perceives the common sensibles through the perception of particular sensible objects. While the five physical senses perceive each other's proper objects incidentally, that is, not in their own identity but acting together as one (eg. bile, being yellow and bitter is perceived incidentally by sight and taste; but the senses can be deceived, and if another object is bitter and yellow, think it to be bile), the common sense perceives the common sensibles not incidentally, so that in normal conditions, according to Aristotle, the human being cannot err as to the unity, number, motion, rest and shape of the perceived objects<sup>95</sup>.

Al-Kindī, though heavily dependent on Aristotle's theory of sensation, introduces the common sense, which he translates as *al-hiss al-kullī*<sup>96</sup> (lit. the universal sense), for reasons that are different from those of Aristotle. For him, the question is not how the things can be represented in the soul as integral images, but what is represented in the soul as an image and what is not. Generally speaking, al-Kindī divides objects of perception into two groups: particular material objects (*al-ashkhāṣ al-djuz ṭyah al-*

*hayūlānīyah*) perceived by the senses – each of them is *mithālī*<sup>97</sup>, that is, represented in the soul by an image; and objects of intellectual perception, which are universals (*kullīyāt*), like genera and species<sup>98</sup>. The latter are not representational, because they lack matter, and that is why intellectual perception is also called by al-Kindī *idrāk lā mithālī* (non-representational apprehension).

Any material object (*kull mā kāna hayūlānīyan*) is represented in the soul by the universal sense (*yumaththiluh al-ḥiss al-kullī fi 'l-nafs*). This is not exactly how Aristotle describes the function of the common sense, which, in his view, first of all, perceives the common sensibles. Al-Kindī says nothing about the common sensibles in the *Letter*, nor in his other philosophical works, and this important link in the chain of the rationalizational process of sensory images is omitted by him. He gives, though, an explanatory example of the functioning of *al-ḥiss al-kullī*, and it is Aristotelian.

Besides the two main groups of objects of perception mentioned above, there is a particular kind of objects that, in al-Kindī's view, can cause confusion: being immaterial, they happen in matter and therefore seem to produce images in the soul. To illustrate how it can happen, al-Kindī takes as example one of the Aristotelian common sensibles, namely, shape (*shakl*). In a colored image, the shape is the limit (*nihāyah*) of the color, and through the color the shape occurs by accident (*ya 'rid*, and this is quite Aristotelian language, cf. κατὰ συμβεβηκός above) to the sense of sight. Due to the fact that the shape is the limit perceived (*mudrak*) by the visual sense, it is sometimes believed that the immaterial (in this case shape) is represented in the soul through it being transmitted (*idjtīlāb*) to the soul by the universal sense. However, in reality, al-Kindī says further, the perception of the limit (*wudjūd al-nihāyah*) is not sensory but intellectual<sup>99</sup>. The last

statement al-Kindī does not prove. He takes it for granted, and that is why overall it is unclear how he understands the function of the universal sense. On one hand, it seems to perceive all kinds of material objects (which Aristotle's ἡ κοινὴ αἴσθησις does not do), and on the other, things like common sensibles, which according to Aristotle are perceived by the common sense in the first place, in al-Kindī's epistemological theory are perceived by the intellect.

Two reasons, to my mind, may account for al-Kindī's misrepresenting the role of the common sense in his epistemological theory: first, his failing to understand how sensory perception is related to intellectual perception. He tries unsuccessfully to find an intermediary between the two by multiplying the nature of the intellect (as I have shown in the Context of Epistemology) or, as in the case now under consideration, by bringing forward *al-ḥiss al-kullī* to bridge the gap between them. It may be surmised, though al-Kindī says nothing about it in the *Letter*, that unlike the other five senses *al-ḥiss al-kullī* should perform some intellectual operations, and that is why *al-ḥiss al-kullī*, and not any other sense, is mentioned in the context when the intelligibles, which, though deprived of matter, occur in matter.

Second, Aristotle's epistemological theory in itself lends sufficient grounds for such confusion: it is unclear whether the common sense forms holistic images directly from material things or through forming first the images of the common sensibles. Indeed, as Aristotle says<sup>100</sup>, it is impossible to pass judgement on separate objects (or separate qualities) by separate faculties, because each sense relates only to the subject which is proper for it to perceive. For example, sight discriminates between white and black, but it cannot distinguish between white and sweet. So, the physical senses, according to

Aristotle, cannot be the ultimate sense organ (οὐκ ἔστι τὸ ἔσχατον αἰσθητήριον)<sup>101</sup>.

Whether this ultimate sense organ is identical with the common sense or not remains unclear<sup>102</sup>. Aristotle refers to the ultimate sense just as “judging faculty” (τὸ κρῖνον), which is one of the faculties of the soul, but he does not mention the common sense at all. A much more systematic exposition of perception and its kinds is found in the *Kashshāf*<sup>103</sup>. Since one of the kinds of perception mentioned by al-Tahānawī appears to be quite similar to al-Kindī’s universal sense, it might be helpful to examine al-Tahānawī’s exposition in order to establish what meaning al-Kindī could have possibly ascribed to his *al-ḥiss al-kullī*.

Just as al-Kindī divides perception into sensory and intellectual, so al-Tahānawī distinguishes two major groups of senses (*al-ḥawāss*, pl. from *al-ḥiss* as used by al-Tahānawī, though strictly speaking, *ḥawāss* is the plural of *ḥāssah*, a sense organ): the external senses (*al-ḥawāss al-zāhirah*) which are the five physical senses; and the internal senses (*al-ḥawāss al-bāṭinah*), which are also five in number. They are: *al-ḥiss al-mushtarak* (the common sense; al-Tahānawī gives here a more faithful translation of ἡ κοινὴ αἴσθησις than al-Kindī’s *al-ḥiss al-kullī*), imagination (*al-khayāl*), conjecture (*al-wahm*; al-Tahānawī uses this term in another sense than al-Kindī, without a pejorative connotation), *al-ḥāfiẓah*/or *al-dhākirah* (memory) and finally *al-mutaṣarrifah* (the judging faculty; with some certainty, it can be supposed that this latter should correspond to Aristotle’s τὸ κρῖνον).

As al-Tahānawī remarks, this division of the senses into external and internal is peculiar only to the philosophers, for the theologians do not recognize any but the five physical

senses. On the authority of the philosophers (though he does not specify any of them) he expounds the function of each of the internal senses in a way which has much in common with al-Kindī's theory of the predicates as shown in the Context of the Predicates in Part I.

Thus, there are two principal kinds of objects of apprehension: particular notions and universal notions. As in al-Kindī's epistemological theory, the universals are apprehended by the intellect. Matters grow more complicated with the particular notions, for they seem not to be apprehended by the same faculty. They are subdivided into particular notions with images, apprehended by the five external senses; and particular notions without images, which are abstract meanings (*ma'ānin*). Now, there follows an interesting passage in the *Kashshāf*<sup>104</sup>, in which al-Tahānawī allots to each of the internal senses its proper object of apprehension or its role in it. This does not proceed without what seems to be a contradiction. *Al-ḥiss al-mushtarak* is the perceiver (*mudrik*) of images (or the particular notions with images); and their preserver/retaining capacity (*ḥāfiẓ*) is *al-khayāl* (imagination). Whether he refers here to the same kinds of images that are perceived by the external senses, or to some other kinds of images, is not clear. *Al-wahm* (conjecture) is the perceiver of meanings (or the particular notions without images), and their preserver is *dhākirah* (memory). (*Al-ḳuwah*) *al-mutaṣarrifah* has no particular object of apprehension, it is said to be a thinking (*mufakkirah*) faculty of the soul, which again makes it look like Aristotle's τὸ κρῖνον.

In an attempt to answer the question, *i.e.*, what kinds of images does the common sense deal with, according to al-Tahānawī's theory of perception, it is helpful to consider his

account, concise as it is, of its role in the epistemological process under the heading of “*al-Ḥiss al-Mushtarak*” in the *Kashshāf*<sup>105</sup>:

“The common sense is a capacity in which the images of sensory particular objects are pictured by the external senses. The common sense is also called in Greek “*banṭāsīyā*”, that is the tablet of the soul (*lawḥ al-naḥs*). The external senses function as “spies” for the common sense; that is why it is called “common” (*i.e.*, because all the five senses contribute to its functioning). According to (some) researchers (‘*inda’l-muḥakkiḳīn*), the soul contemplates the images (of material objects) through them being pictured (*al-irtisām*) on *al-ḥiss al-mushtarak*; according to some others, it is *al-ḥiss al-mushtarak*, not the soul, that perceives (*tudrik*) these images”.

Therefore, the common sense actually plays the role of imagination, *banṭāsīyā*, as al-Tahānawī transliterates it, and its function appears to be the same as the one ascribed by al-Kindī to *al-tawahhum* in *On Definitions*: apprehension of the images of sensory things without matter (*ma’ ḡhaybat ṭīnatiḥā*). The only difference between al-Tahānawī’s account of it and that of al-Kindī is that the former clearly implies that *al-ḥiss al-mushtarak* produces integral images of sensory objects, based on the perception of the physical senses. Al-Kindī’s theory of perception, though not contradicting al-Tahānawī, omits this point.

Finally, it should be remarked that *wahm* has almost the same meaning as *tawahhum* in the *Letter*, though sometimes it may have a negative connotation of a “whim”, as I have mentioned in the Context of Ontology in the discussion of Finitude and Infinity in Actuality and Potentiality.

## The Predicates

In the Context of the Predicates I have already indicated the main differences between the categories of Aristotle (or, strictly speaking, between Porphyry's representation of Aristotelian categories in the *Isagoge*) and al-Kindī's predicates. Here I shall confine myself to giving the definitions of the predicates as they are found in the *Letter*, with some additional details as for their meaning that can be deduced from their usage in a number of passages that do not directly bear upon them.

As I have mentioned above in the form of a diagram, al-Kindī divides his predicates according to three criteria: either according to their being universal and particular; or essential and non-essential; or collective and distinct. These criteria are based on the ways the predicates can be viewed<sup>106</sup>. When they are considered in their ontological status (*i.e.* in their relation to *being*), they are either essential, that is, having independent existence, or non-essential, that is, depending in their existence on essential universals. When considered according to the way they are perceived, the predicates are subsumed either under universal dicta, which are objects of intellectual perception, or under particular dicta, in which case they are apprehended by the senses. The latter are *ashkhās* (individuals). The predicates are collective or distinct according to the way of their application. When they apply to a number of things, giving to each of them their name or definition, they are called collective. When they apply only to one class of things, they are distinct.

Of these three criteria, the second, based on the way of perception, is, so to speak, the weakest. Indeed, the predicates were introduced by Aristotle to serve as logical tools for

giving definitions; and to this end al-Kindī principally uses them in the *Letter*. To include objects of sensory perception as instrumental into the domain of logic would seem incompatible with the notion of logic itself as science dealing exclusively with mental constructs. That is why neither Aristotle, nor Porphyry lists individuals among the predicates.

For al-Kindī, however, as I have briefly mentioned when analyzing the predicates above, the reason for including *ashkhāṣ* into the Aristotelian categories is probably their independent existence, for the ontological status (the first criterion) of the predicates becomes of crucial importance in medieval philosophy. On the other hand, al-Kindī does not subsume *ashkhāṣ* either under the essential or non-essential predicates, and they, though having independent existence, stay apart from the rest of the predicates.

The division of the predicates according to the third criterion was borrowed by al-Kindī from some late Hellenistic commentaries on Porphyry's *Isagoge*<sup>107</sup>.

Aristotle and Porphyry used none of these criteria in their treatment of the predicates the way they are used by al-Kindī. Aristotle, though discriminating between essential and non-essential categories, does not fully elaborate their ontological characteristics, apart from mentioning that non-essential ones inhere, and therefore are existentially dependent on essential ones<sup>108</sup>. Porphyry, in his turn, though aware of the problem of the independent existence of such predicates as genera and species, deliberately omits its discussion from the *Isagoge*<sup>109</sup>.

Before starting the analysis of each of the predicates, some of the characteristics that are common to them all should be mentioned.

All the predicates are multiple either through division (like *ashkhās*, for they can be physically divided into pieces) or through their reference to a number of things (the rest of the predicates).

At the same time, along with multiplicity, there is some kind of unity in all the predicates, otherwise, if they were infinitely multiple, no definition, and therefore knowledge would be possible<sup>110</sup>.

Since “one” can be predicated of every continuum (*kull muttasil*) (an Aristotelian thought picked up by al-Kindī), unity can be predicated of each of the predicates. Each of them is a kind of continuum either through the connection and interrelation of the parts (individuals); or due to the fact that they refer in the same way (*i.e.* define in the same way) a number of things (genera and species); or because they belong exclusively to one kind of things (differentiae and property).

Accidents too possess unity, though not through continuity, but accidentally, κατὰ συμβεβηκός, as Aristotle remarks<sup>111</sup>. Al-Kindī in the *Letter* does not mention in what way an accident can be considered “one”.

The unity that is predicated of all the predicates is metaphoric.

### *Djins* (genus, Gr. γένος)

*Djins* is a collective essential universal. It indicates the substance of a thing or, in other words, it is the informer of the quiddity of a thing (*munbi ’an mā ’īyat al-shay ’*)<sup>112</sup>. Being a universal, it is perceived only by the intellect, not by the senses. Being collective, it refers univocally (*ḳawlan mutawāṭi’an*)<sup>113</sup> to the things of the same substance. Finally, being essential means that it does need for its sustentation (*ḳiwām*) anything but itself.

Genus can be predicated of all created things, but not of the Eternal. The eternal has no genus (*lā djinsa lah*)<sup>114</sup> because if It had a genus, It would be necessarily subsumed under some species. This is not possible, since the Eternal is simple by definition, while species are composed of genera and differentiae.

### ***Faṣl* (differentia, Gk. διαφορά)**

*Faṣl* is a distinct (*mufarrik*) essential universal that distinguishes between the definitions of things. It is the informer about the quality of a thing (*munbi' 'an ayīyat al-shay'*)<sup>115</sup>.

One of the examples of differentia given by al-Kindī in the *Letter* is in the definition of body: body is composed of substance, which is its genus, and of the three dimensions, which are its differentia<sup>116</sup>. In this definition, differentia is a synonym of “form”, Aristotelian εἶδος (or ἰδέα, but the latter is used by Aristotle in reference to Platonic forms).

### ***Naw' or ṣūrah* (species, Gk. εἶδος)**

Species is a collective essential universal. It is composed of a genus and a differentia. It is predicated of a multiplicity of individually different things that belong to the same genus and have the same differentia. Or, in al-Kindī's words, species is composed of its genus that is common to it and to others, and of a differentia that does not exist in others (*al-naw' murakkab min djinsih al-kābil lah wa li-ghayrih, wa min faṣl laysa li-ghayrih*)<sup>117</sup>.

Etymologically the Greek εἶδος, which Aristotle and, following him, Porphyry use for species, comes from the verb ἰδεῖν, to see; thus, εἶδος means literally an object of sight.

As Porphyry mentions in the *Isagoge*, εἶδος is used, above all, to designate the shapeliness/form of an individual (τὸ δὲ εἶδος λέγεται... ἐπὶ τῆς ἐκάστου μορφῆς)<sup>118</sup>.

That is why the first Arabic translation of the Greek εἶδος was *ṣūrah*, “image”. It occurs in Aṣṭāt’s version of the *Metaphysics*. For example, the definition of the species taken from the *Metaphysics* (τὸ εἶδος ἐκ τοῦ γένους ποιοῦσι καὶ τῶν διαφορῶν) is rendered by him as following: “verily, the species (is composed) of a genus and differentiae (*inna’-l-sūrah min al-djins wa’l-fuṣūl*)”<sup>119</sup>.

Al-Kindī was probably the first, or among the first ones, who translated εἶδος as *naw’*. Nevertheless, he still uses the older translation, *ṣūrah*, to designate “species” in the *Letter*, though much more rarely than *naw’*. Thus, speaking about collective and distinct universals, he remarks that a collective universal (*djāmi’*) is such that refers to many things, giving to each of them its definition (*ḥaddah*) and name (*ismah*). The collective universal that refers to individuals is called species (*ṣūrah*)<sup>120</sup>, because it is a unique form (again the term *ṣūrah* is used here) that applies to each of the individuals.

This is one of the instances of al-Kindī’s unsystematic usage of the technical terms, which can cause, as in the example above, difficulty for understanding. The more so, that besides being used to designate “species” and “form”, *ṣūrah* can also mean “image”, as in the following passage from the *Letter*, which speaks about the objects of sensory perception: “ it (*i.e.* a sensuously perceived object) is that whose images are established in the imaginative faculty (*wa huwa alladhī tuthbat suwaruh fi’l-muṣawwir*)”<sup>121</sup>. A. Ivry’s, who translates here *ṣurah* as “form”<sup>122</sup> is not precise, because “form” for al-Kindī

means the same as differentia, which is an intelligible category and has nothing to do with imagination. J. Jolivet gives a correct translation: "...c'est aussi ce don't les images persistent dans l'imaginative"<sup>123</sup>.

It may be the polysemy of the term *ṣūrah* that induces al-Kindī to chose another word, namely, *naw'*, to denote species wherever confusion may arise, but he does not do that regularly.

### ***Khāṣṣah* (property, Gk. ἰδιον)**

Property is a non-esssential universal that indicates the existence of a thing (*munbi'ah 'an innīyat al-shay'*)<sup>124</sup>. It happens in many individuals but only in one species (*'alā naw' wāḥid*). Al-Kindī's example of property is laughter in men: it happens in many individuals but is confined to one species among animals, namely, to human beings. The difference between property and differentia, which too occurs only in the individuals of one species, is that differentia must exist necessarily as long as its species exists, because it is that which distinguishes one species from the other species of the same genus. Property does not exist necessarily. Indeed, one can imagine a person that never laughs, and still he would be a human being, as long as the differentia which distinguishes him from other animals, namely, being rational (*nāṭiq*, as al-Kindī says)<sup>125</sup> is preserved. On the other hand, property indicates human existence, because if someone is said to be capable of laughter, it means that he is human, since among all animals the capacity of laughter belongs only to human beings.

### **'Arad (accident, Gk. συμβεβηκός)**

Accident is a non-essential universal. For its sustentation it needs the substrate of another thing (*huwa alladhī kiwāmuḥ bi'l-shay' al-mawḍū' lah*)<sup>126</sup>. That is, when the substrate perishes, the accident perishes with it. Accident occurs either in one thing exclusively (*fī shay' wāḥid munfaridan bih*)<sup>127</sup>, by this al-Kindī implies that it occurs exclusively in one species), - this is property; or does it occur in many things to which it is common (*yakūn fī ashyā' kathīrah ya 'ummuhā*)<sup>128</sup>, that is, it can occur in many species),- this is common accident ( *'arad' amm*). Common accident can indicate either quantity, thus being subject to augmentation and diminution, or quality – in this case it is subject to similarity/dissimilarity, strongness/weakness etc<sup>129</sup>. In other words, accident is the only predicate that can manifest itself in a heigher or in a lower degree.

The other five predicates are not found in Aristotle or in the *Isagoge*, they are proper to al-Kindī.

### **Shakhs (individual)**

Though shakhs is considered by al-Kindī a predicate, he does not subsume it under any subdivision of universals. Shakhs belongs to particular dicta (*alfāz djuz ṭyah*) which, in general, are not subject of philosophical investigation.

Shakhs can be either natural (*ṭabī'ī*), or artificial (*ṣinā'ī*)<sup>130</sup>. This division al-Kindī borrows from Aristotle, though not without a change. The latter in the passage in the

*Metaphysics*<sup>131</sup>, to which al-Kindī alludes in his division of individuals into natural and artificial, speaks not about individuals but about what kind of objects can be called one. The objects are “one” through being continuous either by nature (τὰ φύσει συνεχῆ) or by art (τεχνῆ). An example of continuity by nature is any organ, such as a leg or an arm; pieces of wood unified by glue, or a house are an example of unity by art. Both individuals, either continuous by nature or by art, are asserted by Aristotle to constitute an essential unity (καθ’ἑαυτὰ ἓν, lit. “one” by themselves).

Al-Kindī, though, in his example of “house”, shifts the accents. According to Aristotle, “house” is continuous by art, but it is an essential unity. For al-Kindī (quite unexpectedly!), “house” is continuous by nature (*fa-inna’l-bayt muttaşal bi’l-ṭab*)<sup>132</sup>, but its composition (*tarkīb*) – and such a term Aristotle does not mention at all- is continuous by accident (*muttaşal bi’l-’araḍ*)<sup>133</sup>, that is, as he adds at the end, through the (builder’s) craft (*bi’l-mihnah*). In doing this, al-Kindī considers essential unity as accidental, quite contrary to Aristotle’s view.

Though the text of the *Metaphysics* could lend grounds for such a confusion (cf. *Met.* X 1 1052a 22 ff., where Aristotle contrasts, among non-accidental unities, things that are themselves the cause of their continuity, and those that are continuous by art), I think that the main reason for al-Kindī’s stressing accidental unity in cases where Aristotle would see essential unity only is the fact that for the former essential unity means “true unity”, and he reserves it, along with true existence, exclusively to the True One.

***Kull* (all, totality) and *djamī’* (whole)**

*Kull* is a collective universal that is predicated of that whose parts are either similar (*mushtabah*), like, for instance, parts of water, or dissimilar, like the parts of a living body.

*Djamī'*, which is a collective universal too, is predicated only of that whose parts are dissimilar, i.e. of an aggregate heterogeneous by accident (*djam' mukhtalifāt bi'l-'arad*)<sup>134</sup>. Therefore *djamī'* is a non-essential universal; while *kull* can be either essential (when, as J. Jolivet remarks in a note to his translation of the *Letter*, it is predicated, for example, of genus with respect to species), or non-essential, when it is used in lieu of *djamī'*.

Al-Kindī's distinction between "all" and "whole" is taken from the *Metaphysics* (Met. V: 26 1024a) where Aristotle, speaking about quantities, discriminates between πᾶν (all, total), whose parts can change their position without affecting the aggregate; and ὅλος (whole), whose parts have fixed positions. Al-Kindī, on his part, substitutes "change of the position of the parts" by "similarity/dissimilarity".

It is of interest to note that al-Kindī, grounding his exposition here on Astāt's version of the *Metaphysics*<sup>135</sup>, reverts the latter's translation of πᾶν as "*djamī'*" (whole) and ὅλος as "*kull*" (all). Nevertheless, in *On Definitions*<sup>136</sup>, al-Kindī preserves Astāt's translation of πᾶν: "all is proper of that which has similar parts (*al-djamī' khāṣṣ lil-mushtabah al-adjzā'*)", but "all is also said of that which is an aggregate of accidentally dissimilar parts (*al-djamī' ayḍan yukāl 'alā djam' al-mukhtalifāt bi'l-'arad*)".

In the *Letter*, however, al-Kindī uses *kull* πᾶν for and *djamī* ' for ὅλος regularly.

As a predicate, *kull* is used either without an article or with a definite article: *al-kull*. In passages dealing with ontological questions, *al-kull* can mean “universe”<sup>137</sup>, mostly in combination with *djirm*: *djirm al-kull* – “the body of the universe”.

*Djamī* ', besides designating one of the predicates, in some contexts in the *Letter* can mean a totality or a combination of units (JJ p. 31 line 6).

### ***Djuz* ' (part) and *ba 'd* (portion)**

*Djuz* ' is a collective universal that measures/enumerates *kull* (*yukāl 'alā mā 'adda al-kull*)<sup>138</sup>. It divides *kull* into equal amounts (*aḳdār mutasāwiyah*); in other words, *djuz* ' is a unit of measurement for *kull*. *Djuz* ' can be either essential or accidental. When it is essential, it can be either one of the similar parts of a totality (*kull*), like parts of water; or one of the dissimilar parts of a totality, like parts of a living body. The accidental part (*al-djuz ' al- 'araḳī*) is an attribute (*maḥmūl*) of the essential part, like tridimensionality of the parts of a living body, or their color, taste etc. (The last example given by al-Kindī to illustrate the accidental part is contradictory to the first definition of *djuz* ', because it does not divide body into equal amounts).

*Ba 'd* is a collective universal that does not measure/enumerate *kull*, because it divides it into unequal amounts. That is why it cannot be called a unit of measurement for *kull* (*fa-yakūn djuz 'an lah*)<sup>139</sup>.

## The Physical and Mathematical Terms

In medieval Arabic sources al-Kindī was acknowledged to be not only the first philosopher among the Arabs, but also the one who obtained high proficiency in various arts and sciences, like mathematics, physics, astrology, medicine etc. According to *Fihrist*, his scientific works by far outnumbered his philosophical treatises<sup>140</sup>. This allowed to some medieval historians to regard him first of all as a scientist. Al-Bayhaqī, for example, in his *History of Islamic Scholars* refers to him as an engineer<sup>141</sup>.

Being so deeply interested in the exact sciences, al-Kindī created a rich technical vocabulary for some of their branches. The glossary of the first volume of the works of al-Kindī edited by Roshdi Rashed gives an idea of how meticulously al-Kindī elaborated his terminology for optics<sup>142</sup>. In the *Letter*, however, as in most of his philosophical epistles, scientific terminology is rather scarce, and is used not for its own sake, so to speak, but mainly to elucidate metaphysical issues.

As in creating technical terms for the applied sciences al-Kindī was dependent on various translation of the works of Euclid, so the terms which occur in his philosophical treatises and which can be classified as physical and mathematical, are borrowed chiefly from the Arabic translations of Aristotle's *Metaphysics* (by Aṣṭāt) and *Physics* (by Ibn Nā'imah)<sup>143</sup>. Of these, "motion", "change" and their subdivisions occupy the central place among the scientific terminology used in al-Kindī's philosophical works in general and in the *Letter* in particular.

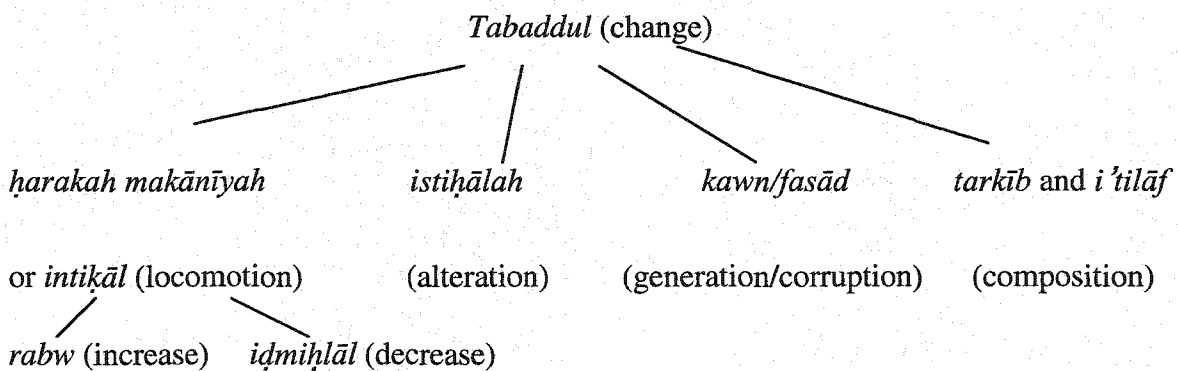
### ***Ḥarakah* (motion), *tabaddul* (change) and their subdivisions**

Strictly speaking, for al-Kindī, as for Aristotle, motion is a kind of change, and it would be more correctly to speak about “change” and its kinds. Indeed, the line from the *Physics*: “*πᾶσα κίνησις μεταβολή τις*”<sup>144</sup> al-Kindī renders in one place as follows: “*al-istiḥālah tabaddul* (motion is change)”<sup>145</sup>, or in another place in the *Letter*: “*al-ḥarakah tabaddul mā* (motion is a kind of change)”<sup>146</sup>. That is, κίνησις is translated either as *ḥarakah* or *istiḥālah*. In spite of al-Kindī’s using these terms sometimes indiscriminately, as in the instance above, he tends to use *ḥarakah* when he wants to stress general physical characteristics of motion, such as its continuity/discreteness, its finitude in actuality and its relation to time (“*al-zamān huwa ‘adad al-ḥarakah*, time is the number of motion”) <sup>147</sup>.

*Istiḥālah*, on the other hand, in most cases means one of the kinds of change.

In other words, though change is the generic notion for motion (and motion in its turn is a species of change), the later possesses its own kinds (in respect of which it plays the role of a genus) and outstanding characteristics that it would be easier to consider separately from “change” and its subdivisions.

Before going into the details, a general scheme of “change” and its species can be drawn according to al-Kindī’s understanding of this term.



**a) *al-ḥarakah***

*Al-ḥarakah* stands for Aristotle's κίνησις. As can be seen from the scheme, it is too general a term to be used for any of the species of *tabaddul*, in fact, all these subdivisions of *tabaddul* are *ḥarakah*. In case of locomotion (*ḥarakah makānīyah*), *intikāl* is a more preferable term in the *Letter*.

*Ḥarakah* (or, rather its principle) is one of the four Aristotelian causes al-Kindī enumerates at the beginning of the *Letter*, namely, the agent cause (“*fā’ ilah, a’ hī mā minḥ mabda’ al-ḥarakah*, the agent cause, I mean (by this) the principle of motion”)<sup>148</sup>. It is one of the main characteristics of a sensory object, in which case it is synonymous with *sayalān* (evanescence)<sup>149</sup>. *Ḥaraka* is the criterion by which science in general is divided into physics, whose object of scientific inquiry (*maṭlūb*) is in motion and, therefore subject to changes; and metaphysics, which inquires into the nature of the Eternal, that does not move or change. *Ḥarakah* is that by which the duration of time is divided and counted (*al-zamān maṣṣūl bi’l-ḥarakah*)<sup>150</sup>.

**b) *intikāl* (locomotion)**

*Intikāl* is al-Kindī’s translation for Aristotle’s φορα<sup>151</sup>. It is the change of place of the parts of the body and its center. *Intikāl* is the generic notion for two other kinds of locomotion which are its species, namely, *rabw* (increase, lit. growth) and *idmiḥlāl* (decrease, lit. evanescence). The difference between them and *intikāl* is that the center of

the body that undergoes increase/decrease is unmoved: it is such a change of place to which the body is brought by its limits either in nearness or farness from its center.

Al-Kindī was probably the first one who translated φορά as *intikāl*: Asṭāt in his translation of the *Metaphysics* uses “*al-ḥarakah fī’l-makān*” for “φορὰ δὲ ἡ κατὰ τόπον” (*Met.* XII 1 1069b 12)<sup>152</sup>. Abū Bishr Mattā translates the same phrase as “*al-nuklah fī’l-makān*” (lit. transfer in the place).

Though al-Kindī’s *intikāl* doubtlessly is a translation of φορά, there seems to be an important difference between him and Aristotle in the way they understand this term. For al-Kindī locomotion is a species of change in general, or else a kind of motion. For Aristotle φορά is the genus of all other kinds of change (and motion), as is clear from the following line: “φορὰ γὰρ ἡ πρώτη τῶν μεταβολῶν”, translated by Asṭāt as “*wa inna’l-ḥarakah ūlā al-tagħayyurāt*, motion is the first of changes”<sup>153</sup> (*Met.* XII 7 1072b 9).

### c) *istiḥālah* (motion, alteration)

Only once in the *Letter* (in the example mentioned above under *Ḥarakah*) does al-Kindī refer to *istiḥalah* as “motion”, in which case it is synonymous with *ḥarakah*. In all other instances *istiḥalah* means “alteration”, the same as Aristotle’s ἀλλοίωσις<sup>154</sup>, change of qualities, or accidental change. As al-Kindī defines it: “the change of qualities alone that are accidental (al-maḥmūlah) in a body is alteration”. *Istiḥālah* is contrary to *kawn* and *fasād*, which are substantial change.

### d) *kawn/fasād* (generation/corruption)

These terms have been analysed at length among the ontological terms. Here it should be noted in connection with other kinds of change/motion that in fact there is only one kind of change that al-Kindī would call substantial, or generation: this is *creatio ex nihilo*, *ibdā* 'which is a unique action proper to God. All other changes, *kawn/fasād* included (unlike Aristotle's γένεσις, generation, or μεταβολή, substantial change), do not involve the essence of a thing (cf. my discussion of the usage of *aysa* in the Ontological Terms).

**e) *tarkīb/ī 'tilāf* (composition/combination)**

*I'tilāf* is just another word for *tarkīb*; there is no difference between their meanings. It occurs only once in the *Letter*.

*Tarkīb* (composition), the more usual term of the two, means such a change that is opposite to the state of not being composed ("*al-tarkīb tabaddul al-ḥāl allatī hiya lā tarkīb*")<sup>155</sup>. As the result of *tarkīb*, *murakkabāt* come into existence, that is, all things composed of form and matter; in other words, all created things.

***Al-wāḥid al-'adadī* (the mathematical "one")**

Investigating the answer to the question "what is the true unity?", al-Kindī comes to consider the absolute little. It may be supposed, he argues, that little may be predicated absolutely, because in fact the first number is "two" (it is probable that al-Kindī grounds himself here on David's commentary on *Isagoge*, but not following him exactly<sup>156</sup>) every other number being greater than it. That is, "two" is the absolute little, since it is the least of the numbers.

But, on the other hand, “two” is composed of “ones”, and if “one” were a number, nothing would be less than it. The question now is: can “one” be considered a number?

In order to find an answer, al-Kindī applies to “one” an Aristotelian property of quantities, found in the *Categories* (Cat. VI 6a 28 ff). Each quantity (ποσόν) – and the number, according to Aristotle (and al-Kindī) is a discrete quantity (*kammīyah munfaṣalah*) – can be both “equal” or “unequal” (ἴσον/ἀνίσον) in relation to other quantities. Thus, if “one” were a number, it would be *musāwin lā musāwin* (equal and unequal at the same time). For Aristotle that would hold true, and “one” would be a number according to this distinction (but Aristotle rejects the idea of “one” as a number for some other reason mentioned further). But al-Kindī applies the property of equality/inequality in another way: not to “one” itself but to the units (*āḥād*) from which “one” were presumably composed: some of these units would be equal to the whole “one” and the others would be unequal (*ba ‘duḥā musāwīyah lah* (to “one”), *wa ba ‘duḥā lā musāwīyah*). To be sure, such units of “one” do not exist, and this supposition is one of the weakest arguments of al-Kindī against “one” being a number. (Later in the chapter, he, however, applies correctly equality/inequality to “one”, *i.e.*, “one” is equal to another “one” and unequal to other numbers, but the conclusion that “one” should be thus a number is finally rejected owing to other arguments).

The second argument against “one” not being a number is the following: each number is either even (*zawḍj*) or odd (*fard*). But “one” is neither even nor odd, because in order to be even it would have to be divisible into two equal parts, as well as for being odd, it would have to be divisible into two unequal parts. Consequently, one is not a number. This distinction of numbers goes back to the Pythagoreans, as is reported in the

*Metaphysics* (*Met.* I 5 986a 17). It is strange that al-Kindī brings forward this argument here, since for the Pythagoreans the combination of odd and even makes unity (cf. *Met. ibid.* and ff.), to which al-Kindī would never agree, asserting that both even and odd are divisible, and thus, not truly one. This argumentation of al-Kindī is as unsatisfactory as the first one.

The third argument (the decisive one) by virtue of which al-Kindī finally declares “one” not to be a number, is based on Aristotle’s postulate found in the *Metaphysics* to the effect that the principle, or the element, of a thing is not that thing. This postulate is not expressed outwardly, rather it is implied in the following two passages. In the first one, Aristotle states that the questions “what is it to be one?” and “what is the definition (*i.e.* explaining factor, as he elucidates further) of unity?” do not have the same meaning (*Met.* X 1 1052b 1 ff.). In the second one (*Met.* XIV 1 1088a 1 ff.) Aristotle argues that “one” cannot be a number because it is the measure of numbers and thus belongs among the principles (cf. also *Met.* XIV 1 1087a 30 ff.).

Based on these passages from the *Metaphysics*, al-Kindī formulates his principle that “*rukn al-shay’ alladhī yubnā minh al-shay’... laysa huwa al-shay’*”<sup>157</sup> (the element of a thing from which that thing is constructed... is not that thing). Thus, if any number is composed from units, then “one” is the element of number, and therefore, it is not a number. Moreover, if “one” were not the element/principle (*rukn*) of the numbers, it would have to be composed of units as any other number (*murakkab min āḥād*), and therefore, would not be one.

Still, under the influence of David, al-Kindī is obliged to take into account his further argument: if “one” is not a number because it is an element of “two”, then in its turn,

“two” may also be said not to be a number because it is an element of “three” etc., this line of reasoning being applicable to all the numbers. This argument is not true in al-Kindī’s view (even to David it holds true only with respect to “two”; he considers “three” to be the first number), because unlike all the numbers “one” itself has no element; it is simple (*basīṭ*). It is not possible for any number to be simple, and consequently, as al-Kindī concludes finally, *al-wāḥid al-‘adadī* is not a number.

Since “one” is an element of a number and not a concrete number, the definition of number will include “one” fully. That is, “one” by itself is not a subject (ὑποκείμενον), (i.e. in itself “one” is nothing) but either an arrangement of units (*naẓm al-waḥdānīyāt*), or a totality of units (*djamī’ al-waḥdānīyāt*), or a collection of units (*ta’līf al-waḥdānīyāt*). Thus the smallest number for al-Kindī (as for Aristotle) is “two” because it is the smallest combination of units. (cf. *Met.* XIV 1 1088a 6 ff: “ἐλάχιστος δὲ ἀριθμὸς ὁ μὲν ἀπλῶς ἐστὶν ἡ δυάς” absolutely speaking, the smallest of the numbers is “two”).

Though “two” is the absolute smallest number, it is not the absolute little because by its nature it is the doubling of “one” (*taḍ’īf al-wāḥid*), or the sum (*djam*’) of two “ones”. The following reasoning is operative here: 1) “two” is composed; 2) every composed has parts; 3) a composed is a whole related to its parts; 4) a whole is bigger than its parts; 5) thus, “two” cannot be absolute little because it is bigger than its parts.

Thus, in responding to the question: “What is the absolute little?”, al-Kindī asserts that it does not exist, which is in accordance with his view that no attribute can be predicated absolutely (*mursalan*). “Being absolute” is reserved by him only to *al-Wāḥid al-Ḥaqq*.

### ***Djism and djirm (body)***

Both *djism* and *djirm* can be said to mean “body”, and this is how A. Ivry renders them throughout his translation of the *Letter*. Al-Kindī’s usage of these terms in the *Letter*, however, is very *nuancé* to be rendered always by “body” without an explanatory remark.

J. Jolivet translates *djism* as “corps” and “solide”; and *djirm* as “corps” and “volume”. In both cases, his translation seems to me somewhat artificial. For example, let us consider the following passages:

- 1) “*wa kadhalik lā yuḳāl ḳawlan ṣādīḳan: djism aṭwal aw aḳṣar min saṭḥ aw ḳhaṭṭ...* (De même on ne dit pas, si l’on parle correctement, qu’un solide est plus long ou plus court qu’une surface, une ligne (JJ p.81 line 16 ff);
- 2) (al-Kindī continues the same topic) “*fa-bayin an lā yuḳāl al-ṭūl wa’l-ḳaṣr ... illā li-mā kāna fī djins wāḥid, aw fī djirm faḳaṭ aw saṭḥ ....* (Il est donc clair qu’on attribue le long et le court... seulement à ce qui est dans un genre unique, c’est-à-dire à un volume seulement, à une surface seulement... (JJ p.81 line 25 ff).

Here al-Kindī’s usage of *djism* and *djirm* is obviously synonymous, for both of them are used in the same discussion of the continuous magnitudes (body, surface, line, place, time) and compared with the same notions of “surface”, “line” etc. Therefore J. Jolivet’s translation *djism* as “solide” and *djirm* as “volume” appears arbitrary, and besides, he does not make any explanatory remark to ground his translation on. I think that it would be better to translate here both *djism* and *djirm* as “body” with a remark that it is considered in its quantitative aspect.

The distinction between *ḍjism* and *ḍjirm*, to my mind, lies sooner in a different usage (inconsistent as it may appear) rather than in different meanings. As I have mentioned at the beginning of my Contextual Analysis of the *Letter*, *ḍjirm* occurs more frequently than *ḍjism* in the ontological and mathematical contexts. In the latter, *ḍjism* may also occur with the same meaning, as in the passages above. In some instances, however, *ḍjism* and *ḍjirm* may have a slightly different connotation. For example, for “the body of the universe” in most cases stands “*ḍjirm al-kull*”. Only in the discussion of void and plenum (*khalā’ wa malā’*) does *ḍjism al-kull* occur, in which case *ḍjism* is a synonym of plenum (cf. JJ p.21 line 15 where *khalā’* and *malā’* are juxtaposed with *farāgh* and *ḍjism* respectively).

In the physical contexts, *ḍjism* is more common than *ḍjirm* (in these cases J. Jolivet translates it as “solide”, cf. JJ p. 81 line 5,6,7 ff); though *ḍjirm* also occurs (*al-maḥsūs abadan ḍjirm wa bi’l-ḍjirm*, the sensory object is always a body and in a body).

It may be worth noting that in his scientific works, al-Kindī uses *ḍjism* and *ḍjirm* irrespectively in the meaning of physical body.

<sup>1</sup> *Kashshāf*, p. 4.

<sup>2</sup> In her article *Anniya-Anitas*, M.T. d’Alverny gives a detailed summary of different views concerning the origin of this term. She herself seems to uphold the hypothesis of *anniya* having been coined from εἴναι, because it corresponds most often to this Greek term in Astāt’s translation of the *Metaphysics*. M. T. d’Alverny. “*Anniya-Anitas*”. *Mélanges offerts à Étienne Gilson*, Paris : Librairie Philosophique J. Vrin, 1959, p. 73.

<sup>3</sup> See AR, pp. 97-101.

<sup>4</sup> *Ibid.*, p. 97.

<sup>5</sup> *Kashshāf*, p. 4.

<sup>6</sup> AR, p. 98.

<sup>7</sup> *Ibid.*, p. 100. See also A. M. Goichon. *Lexique de la langue philosophique d’ Ibn Sina*. Paris: Desclée de Brouwer, 1938, pp. 9-11.

<sup>8</sup> *Ibid.*

<sup>9</sup> JJ, p. 9 line 13.

<sup>10</sup> AR, p. 173.

<sup>11</sup> JJ, p. 11 line 6. Cf. also the latin *anitas* that occurs in the similar context. M. T. d’Alverny, *op.cit.*, p. 69.

<sup>12</sup> JJ, p. 31 lines 22-23.

<sup>13</sup> JJ, p. 35 line 21.

<sup>14</sup> AI, p. 121.

<sup>15</sup> AR, p. 166.

- <sup>16</sup> JJ, p. 33 line 5.
- <sup>17</sup> *Phys.* III 1 200b 33.
- <sup>18</sup> *Met.* I 3 983b 10-11; I 4 985b 10; I 9 992b 1-7; III 4 999b 14; V 24 1023b 2; VII 2; VII 3; VIII 1; VIII 4; IX 6 1048b 9; IX 7 1049a 27; XIII 1; XIII 2 1077a 35; XIII 3 1077b 12; XIII 6 1080b 18; XIII 9 1086a 23; XIV 1 1088b 2.
- <sup>19</sup> JJ, p. 35 line 25.
- <sup>20</sup> JJ, p. 79 lines 4-10.
- <sup>21</sup> JJ, p. 43 line 15 ff.
- <sup>22</sup> *Kashshāf*, v. I pp. 203-208.
- <sup>23</sup> Frank, R. *The Metaphysics of Created Being According to Abū Hudhayl al- 'Allāf*. Istanbul, 1966, p. 42.
- <sup>24</sup> Cf. Frank, R. *Beings and Their Attributes*. State University of New York Press: Albany, 1978, pp. 131 (*ḥādīth*); 22, 26 f, 37 n 49 (*ṣifah* as synonymous with *ḥāl*).
- <sup>25</sup> JJ, p. 43 line 2.
- <sup>26</sup> JJ, p. 49 line 5.
- <sup>27</sup> JJ, p. 53 lines 16-17.
- <sup>28</sup> JJ, p. 9 line 12.
- <sup>29</sup> JJ, p. 43 line 16.
- <sup>30</sup> *Kashshāf* v. I p. 511
- <sup>31</sup> *Ibid.*, v. II p. 1313.
- <sup>32</sup> It may be supposed that in this sense māhiyah is sensually perceived, as mentioned in al-Djurdjānī's definition. It is also the same as particular quiddity.
- <sup>33</sup> JJ, p. 19 line 4.
- <sup>34</sup> *Ibid.*, p. 9 line 12.
- <sup>35</sup> *Ibid.*, p. 41 ff.
- <sup>36</sup> *Ibid.*, lines 9-10.
- <sup>37</sup> Cf. n. 26.
- <sup>38</sup> *Ibid.*, p. 33 lines 10-11.
- <sup>39</sup> *Ibid.*, lines 9-10.
- <sup>40</sup> Cf. an exposition of the meaning of *wudjūd* and *maudjūd* in A. M. Goichon. *La Philosophie d'Avicenne et son influence en Europe médiévale*. Paris : Librairie d'Amérique et d'Orient, 1951, p. 62. "C'est (*wujūd*) l'existence, l'esse des latins".
- <sup>41</sup> JJ, p. 8.
- <sup>42</sup> *Kashshāf*, v. II p. 1457.
- <sup>43</sup> *Ibid.*
- <sup>44</sup> *Ibid.*
- <sup>45</sup> JJ, p. 85 lines 7-8. Cf al-Kindī's usage of 'ayn in the sense of "individual existence" in his treatise *On the Prostration of the Extreme Body*. JJ, p. 195 line 6.
- <sup>46</sup> JJ, p. 19 line 3.
- <sup>47</sup> *Ibid.*, lines 7-8.
- <sup>48</sup> *Kashshāf*, v. II p. 1456.
- <sup>49</sup> JJ, p. 41 line 4.
- <sup>50</sup> *Ibid.*, p. 40.
- <sup>51</sup> AI, p. 76.
- <sup>52</sup> JJ, p. 33 line 24
- <sup>53</sup> *Ibid.*, p. 32.
- <sup>54</sup> AI, p. 72.
- <sup>55</sup> *Kashshāf*, v. II p. 1273.
- <sup>56</sup> JJ, p. 33 lines 5-6.
- <sup>57</sup> *Ibid.*, p. 83 line 26- p. 85 line 1.
- <sup>58</sup> *Ibid.*, p. 83 line 20.
- <sup>59</sup> *Ibid.*, p. 33 line 21.
- <sup>60</sup> *Ibid.*, p. 31 line 10.
- <sup>61</sup> *Ibid.*, line 13.
- <sup>62</sup> Cf. *Met.* I 3 984a 20.
- <sup>63</sup> JJ, p. 35 line 2.
- <sup>64</sup> *Ibid.*, p. 34.
- <sup>65</sup> For instance, JJ, p. 33 and *passim*.
- <sup>66</sup> *Ibid.*, p. 42.
- <sup>67</sup> *Kashshāf*, v. II p. 1274.
- <sup>68</sup> JJ, p. 9 line 12; p. 19 line 12; p. 43 lines 16, 17; p. 45 line 6; p. 67 lines 15, 19.
- <sup>69</sup> *Ibid.*, p. 43 line 16.

- <sup>70</sup> *Ibid.*, p. 27 line 17.
- <sup>71</sup> AI, p. 72.
- <sup>72</sup> AI, p. 166, n. 123-6-7. Bouyges II: 1034.7. R. Walzer, "New Studies of al-Kindī", *Greek into Arabic*, p. 187.
- <sup>73</sup> R. Frank, "Some Textual Notes on the Oriental Versions of Themistius' Paraphrase of Book I of the *Metaphysics*". *Cahiers de Byrsa* (1958-59) p. 241, n. 10.
- <sup>74</sup> *Ibid.*, p. 215.
- <sup>75</sup> See Technical Terms Index –Arabic in R. Frank's *Beings and their Attributes*.
- <sup>76</sup> AR, p. 182 n 2.
- <sup>77</sup> *Ibid.*
- <sup>78</sup> *Ibid.*
- <sup>79</sup> *Ibid.*, p. 113 n. 5.
- <sup>80</sup> See for example Analytical Index of Technical Terms in *Aristotle's Metaphysics* tr. by Richard Hope. New York: Columbia University Press, 1952; p. 357.
- <sup>81</sup> AI, p. 67.
- <sup>82</sup> JJ, p. 26.
- <sup>83</sup> Cf. n. 76.
- <sup>84</sup> AR, p. 183.
- <sup>85</sup> *Ibid.*, p. 169.
- <sup>86</sup> JJ, p. 11 line 9 ff.
- <sup>87</sup> *Ibid.*, p. 19 line 13; p. 27 line 5.
- <sup>88</sup> *Ibid.*, p. 23 lines 22-23.
- <sup>89</sup> *Kashshāf*, pp. 1456-1461.
- <sup>90</sup> *Ibid.*, p. 1455.
- <sup>91</sup> *Ibid.*
- <sup>92</sup> JJ, p. 18; p. 26.
- <sup>93</sup> AI, p. 61.
- <sup>94</sup> *De An.* III 1. 425a 14 ff.
- <sup>95</sup> *Ibid.*
- <sup>96</sup> For example JJ, p. 21 line 5.
- <sup>97</sup> *Ibid.*, p. 19.
- <sup>98</sup> *Ibid.*
- <sup>99</sup> *Ibid.*, p. 21. See also G. Atiyeh, *op.cit.*, pp. 105-108, where he says that "al-Kindī sees the function of the faculties (of the soul) with Aristotelian eye". He does not mention al-Kindī's common sense there and its correspondence to Aristotelian universal sense.
- <sup>100</sup> *De An.* III 2 426b.
- <sup>101</sup> *Ibid.*, 426b 16.
- <sup>102</sup> Deborah Modrak in her book *Aristotle: the Power of Perception* gives a detailed analysis of *koinē aisthēsis* (pp. 62-71 and 76-77). As she mentions there, the universal sense is the point at which the special senses converge (*De An.* 426b 17-427a 14). Its object of perception are the common sensibles, which are also said to be perceived in themselves (*kath' hauta*), when apprehended by the common sense, or *kata sumbebēkos*, when apprehended by another sense. The common sense, besides apprehending the common sensibles, is also the faculty that enables a percipient to make various apperceptual judgements (*De An.* 426b 8-21). Thus, in her analysis, it appears that the common sense is identical with *tò kōīvov*, or, rather *tò kōīvov* is one of its functions. She does not rise the question, how this identification is possible, in spite of Aristotle's being not very clear (to my mind) at this point. For her, as for E. Spicer (*op.cit.*, pp. 78-80), the main contradiction in Aristotle's theory of the common sense is that its objects, *i.e.* the common sensibles, are perceived both in themselves and accidentally.
- <sup>103</sup> *Kashshāf*, v. I p. 302.
- <sup>104</sup> *Ibid.*
- <sup>105</sup> *Ibid.*, v.I p. 304.
- <sup>106</sup> JJ, pp. 43-47.
- <sup>107</sup> Cf. AI, p. 167 n. 125.3.
- <sup>108</sup> Cf., for example Aristotle's usage of accident (*Met.* I 8 989b 3; III 1 995b 20; III 2 997a 25-34) and genus (*Met.* I 8 989b 26; III 2 997a 21; III 3 998a 32).
- <sup>109</sup> Porphyre, *op.cit.* p. 1. See also n. 37 in Part I.
- <sup>110</sup> These topics al-Kindī discusses extensively in Chapters 3 and 4 of the *Letter*.
- <sup>111</sup> *Met.* IV 2 1003b 32.
- <sup>112</sup> JJ, p. 49 line 5.
- <sup>113</sup> *Ibid.*, p. 47 line 17.
- <sup>114</sup> *Ibid.*, p. 27 lines 11-12 and ff.
- <sup>115</sup> *Ibid.*, p.49 line 12.

- <sup>116</sup> *Ibid.*, p. 37 lines 1-2. Later in the *Letter al-Kindī*, giving a slightly different variant of this definition, says that the three dimensions are the form (or, maybe, should it be understood as *species*) of a thing: p. 79 line 11.
- <sup>117</sup> *Ibid.*, p. 27 lines 12-13.
- <sup>118</sup> *Porphyry the Phoenician Isagoge*, p. 32 and n. 25 there.
- <sup>119</sup> Bouyges II: 975.
- <sup>120</sup> JJ, p. 45.
- <sup>121</sup> *Ibid.*, p. 19 line 11.
- <sup>122</sup> AI, p. 61.
- <sup>123</sup> JJ, p. 18.
- <sup>124</sup> *Ibid.*, p. 49 lines 18-19.
- <sup>125</sup> *Ibid.*, p. 45 line 3.
- <sup>126</sup> *Ibid.*, p. 45 line 5.
- <sup>127</sup> *Ibid.*, line 8.
- <sup>128</sup> *Ibid.*, line 10.
- <sup>129</sup> *Ibid.*, p. 49 lines 25-26.
- <sup>130</sup> *Ibid.*, p. 45 line 20 ff.
- <sup>131</sup> *Met.* V 6 1016a 4.
- <sup>132</sup> JJ, p. 45 line 21.
- <sup>133</sup> *Ibid.*, lines 21-22.
- <sup>134</sup> *Ibid.*, p. 47 lines 4-5.
- <sup>135</sup> Bouyges II 667. See also AI, p. 171 n. 127.11.
- <sup>136</sup> AR, p. 170.
- <sup>137</sup> JJ, p. 21 lines 15, 24; p. 23 lines 1,2,5 and *passim*.
- <sup>138</sup> *Ibid.*, p. 47.
- <sup>139</sup> *Ibid.*, p. 47.
- <sup>140</sup> *Fihrist*, pp. 358-365.
- <sup>141</sup> Al-Bayhaqī, *op.cit.*, p. 47.
- <sup>142</sup> RR, pp. 703-757.
- <sup>143</sup> See Endress, *op.cit.*, p. 52. *Fihrist*, p. 250. F. Peters, *op.cit.*, p. 160.
- <sup>144</sup> *Phys.* V 1 225a 34.
- <sup>145</sup> JJ, p. 27 line 24.
- <sup>146</sup> *Ibid.*, p. 33 line 2.
- <sup>147</sup> *Ibid.*, p. 31 lines 23-24.
- <sup>148</sup> *Ibid.*, p. 11 lines 3-4.
- <sup>149</sup> *Ibid.*, p. 19 line 8.
- <sup>150</sup> *Ibid.*, p. 31 line 12.
- <sup>151</sup> Cf. *Met.* X 1 1052a 28; XI 9 1065b 13 and *passim*.
- <sup>152</sup> Bouyges 3: 1437, 1608. See also AI, p. 146 n. 114.3.
- <sup>153</sup> *Ibid.*
- <sup>154</sup> Cf. *Met.* I 8 989a 27; IV 5 1009b 13; V 9, 14, 21.
- <sup>155</sup> JJ, p. 37 lines 2-3.
- <sup>156</sup> See AI, p. 180 n. 146.15.
- <sup>157</sup> JJ, p. 77 lines 16-17.

## List of Abbreviations

- AR M. 'A. H. Abū Rīdah's edition of *The Letter on the First Philosophy* and other treatises, in the *Rasā'il al-Kindī al-Falsafīyah*
- JJ *Oeuvres philosophiques et scientifiques d'al-Kindī*, vol. II: *Métaphysique et Cosmologie*. Ed. par R. Rashed et J. Jolivet
- AI A. Ivry. *Al-Kindī's Metaphysics*
- CAG *Commentarii in Aristotelem Graeca*

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