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AL-GHAZĀLĪ:
THE INTRODUCTION OF PERIPATETIC SYLLOGISTIC
IN ISLAMIC LAW (AND KALĀM)

by

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In the fourth introduction to the *Tabāfut*, al-Ghazālī affirms: ‘Yes, when they (i.e., the philosophers) say that the logical sciences must be mastered, this is true. But logic is not confined to them. This is the principle that in the discipline of theology we name the “Book of reflection (*naẓar*)”. They changed its expression to “logic” (*mantiq*) to magnify it’, and, somewhat later, he adds: ‘We will make it plain that what they set down as a condition for the truth of the matter of the syllogism in the part “*Demonstration*” of logic (*qism al-burhān min al-mantiq*), and what they set forth as a condition for its form in the book of *Syllogisms*, and the various things they posited in the *Isagogè* and the *Categories* which are parts of logic and its preliminaries, [are things] none of which have they been able to fulfil in their meta-physical sciences.’¹

From these few words, it is obvious that logic is held in high esteem by al-Ghazālī, and that syllogistic theory, both in its formal and material aspects, constitutes in his view one of the cornerstones — or should one say: *the* cornerstone? — of the logical

1. AL-GHAZĀLĪ, *The Incoherence of the Philosophers*, A parallel English-Arabic Text, translated, introduced and annotated by M. E. MARMURA (Islamic Translation Series). Provo, Utah, Brigham Young University Press, 1997, p. 9, 9-12 and 23-9 (the translation has been slightly modified).

system itself. But, at the same time, he is convinced that this science is not the exclusive privilege of the philosophers. He insists that it is also present in *kalām*, although it is there designated by a different name, i.e., *nazar*, “reflection”. Moreover, he emphasises that the philosophers themselves, at least in the domain of metaphysics, fail to apply the criteria of correct reasoning as exposed in both books of the *Analytics*.

For a better, and hence correct understanding of the proper contents and way of expression of philosophically articulated logic, al-Ghazālī eventually points to his work *Mi'yār al-'ilm*, *The Standard for Knowledge*². As I have tried to show elsewhere, al-Ghazālī, in this latter work, consults a wide range of texts, especially Avicennian (*Najāt*, *Ishārāt*, *Dānesh-Nāmeḥ* (*Maqāṣid*) and *Kitāb al-ḥudūd*) and Farabian (*al-Qiyās aṣ-ṣaghīr* and *al-Maqūlāt*)³. Very broadly speaking, it is undoubted that the logic of both Ibn Sīnā and al-Fārābī is ultimately Aristotelian inspired, but also is largely based on further developments of the Stagirite's ideas in the “Alexandrian” tradition⁴. Let me stress that this does not mean that they are just slavish imitators of that tradition, nor that their logical doctrines are identical. It simply shows that there exists a common background, which offers al-Ghazālī the possibility to combine parts of their works. The very fact that al-Ghazālī's does so, does not in itself prove that he totally identified with their respective logical thoughts. It only indicates that he was aware that some issues were better, or, at least, more completely developed, in one of them.

Let me summarize a few of the major findings regarding those parts dealing more or less with the “syllogism”⁵.

2. *Ibid.*, p. 10, 1.

3. See JANSSENS J., «Le *Mi'yār al-'ilm fī fann al-manṭiq* d'al-Ghazālī: sources avicenniennes et farabiennes», *Archives d'histoire doctrinale et littéraire du Moyen Age*, 69 (2002), p. 39-66, now reprinted in J. JANSSENS, *Ibn Sīnā and his Influence on the Arabic and Latin World* (Variorum Collected Studies Series CS 843). Aldershot, Hampshire, Ashgate, 2006, IX. Note that the designation *Dānesh-Nāmeḥ* (*Maqāṣid*) implies that al-Ghazālī's wording is in the present work sometimes although not always, closer to that of his own *Maqāṣid*, which is a slightly modified Arabic translation of Ibn Sīnā's Persian work.

4. For a general survey of Arabic logic, see STREET T., «Arabic Logic», in *Handbook of the History of Logic*, ed. Dov M. Gabbay and J. Woods. Amsterdam, Elsevier, 2004, p. 523-96, especially p. 523-60 (where he mainly deals with al-Fārābī and Ibn Sīnā, and the precise nature of the relation between their respective logical systems). Street also offers a basic bibliographical list (*ibid.*, p. 586-90).

5. For further details of the summary I here present, especially regarding the precise loci of the Avicennian and Farabian texts referred too, see Janssens, «Le *Mi'yār al-'ilm fī fann al-manṭiq*», p. 46-56.

At the end of the first book of the *Mi'yār*, al-Ghazālī presents an encompassing theory of the proposition⁶. He defines it as an assertion involving truth or falsehood. He further deals with the basic components (subject-predicate); the three possible kinds one may distinguish (predicative, connective conditional and disjunctive conditional); the essential characteristics: affirmative / negative (including the problem of the negation, i.e., whether it is linked to the copula or to the attribute), general / particular, necessary, possible, impossible; and, finally, the issues of contradiction (*naqīd*) and conversion, particularly the conditions that are linked with them. The major source of inspiration turns out to be Ibn Sīnā's *Ishārāt*, although in some cases one detects direct derivations from the *Najāt* or the *Maqāsid* (*Dānesh-Nāmeḥ*)⁷. Hence, al-Ghazālī clearly bases his exposé of the proposition exclusively on Ibn Sīnā. Of course, many of the ideas expressed were already present in al-Fārābī, but the topic of the conditional proposition, although not completely absent in al-Fārābī, as shown by e.g., his *al-Qiyās aṣ-ṣaghīr*⁸, seems to have received a greater development in Ibn Sīnā. In this respect, the choice of Ibn Sīnā's text is almost natural. Moreover, for these parts wherein Ibn Sīnā fundamentally agrees with al-Fārābī, the articulation happens in an almost unmodified form, and thus there is no real need for any explicit reference to the latter's thought. It thus is likely that al-Ghazālī found Ibn Sīnā's exposé better, since more encompassing, and thus more telling.

Two additional remarks are in order:

1. Al-Ghazālī (p. 81, 18) explicitly mentions that the conditional disjunctive proposition is called in kalām: *sabr wa-taqṣīm*, "classification and successive elimination". Although al-Ghazālī does not mention it, it is worthwhile to note that the jurists also employed this latter method in order to establish the cause of, or the rationale behind, the judgment decreed in the original case. More precisely, they identified

6. For the different extant editions of this work, see DAIBER, H., *Bibliography of Islamic Philosophy* (Handbuch der Orientalistik, Abt. I, 43). Leiden – Boston – Köln, Brill, 1999, p. 351, n° 3517. References are given in such a way that the reader can easily identify them in any of the editions. Every time a precise pagination is given, the reference is to the anonymous edition of Beirut, i.e., AL-GHAZĀLĪ, *Mi'yār al-'ilm fī fann al-manṭiq*. Beirut, Dār al-Andalus, 1978.

7. For the existence of an intimate link between al-Ghazālī's *Maqāsid* and Ibn Sīnā's *Dānesh-Nāmeḥ*, see JANSSENS, J., «Le *Dānesh-Nāmeḥ* d'Ibn Sīnā: un texte à revoir?», *Bulletin de philosophie médiévale*, 28 (1986), p. 163-77. For the existence of another *Maqāsid*, also by al-Ghazālī (but now mainly inspired by Ibn Sīnā's *Shifā'*, see GRIFFEL FR., «Ms. London, British Library Or. 3126: An Unknown Work by al-Ghazālī on Metaphysics and Philosophical Theology», *Journal of Islamic Studies* 17 (2006), pp. 1-42.

8. AL-FĀRĀBĪ, *Al-qiyās aṣ-ṣaghīr*, in M.T. Dānesh Pazhūh (ed), *Al-manṭiqiyyāt lil-Fārābī*. Qom, al-Mar'ashī, 1987, p. I, 152-94, p. 166-69; or in R. al-'Ajam (ed), *Al-manṭiq 'inda al-Fārābī*. Beirut, Dār al-Mashriq, 1986, p. II, 65-93, p. 82-86.

- all candidates that are thought to be possible causes of the judgment and subsequently eliminated those that are less likely than others to constitute a cause, until such point when they were left with only one. This last was then considered to be, with the highest degree of probability, the cause of judgment. Hence, it is obvious that this argument involves formally the conditional disjunctive syllogism⁹;
2. Al-Ghazālī, in his discussion of contradiction (p. 90,12 – 94,7), offers examples explicitly taken from *fiqh*, “Islamic Law”, in order to show that several criteria have to be fulfilled before a real contradiction occurs. By way of illustration, I mention only one (p. 91, 11-14): the saying in law “one partly has power over venial sin and partly not” does not constitute a proper contradiction, since the very same subject is not involved in both cases — the former referring to the deflowered, but unmarried woman; the latter to the virgin¹⁰.

The second book of the *Mi'yār* starts with a part devoted to the form of the syllogism. Al-Ghazālī first elaborates a few basic remarks, concerning *inter alia* the distinction between syllogism, induction and reasoning by analogy, on the one hand; and the constitutive elements of the syllogism (Major, Minor and Middle term), on the other. This introductory part is mainly derived from Ibn Sīnā's *Ishārāt* and *Dānesh-Nāmeḥ* (the latter mainly as “reworded” by al-Ghazālī in the *Maqāṣid*). Hereafter, al-Ghazālī presents the three Aristotelian figures of the predicative syllogism, and its fourteen valid moods. He furthermore deals with the other kinds of syllogisms, i.e., the connective conditional; the disjunctive conditional; the “*deductio ad per impossibile*” (*al-khalf*); syllogism from induction (*istiqrā'*); analogy (*tamthīl*); and composed and imperfect syllogisms. Al-Fārābī, and more precisely his *al-Qiyās as-ṣaghīr*, constitutes the major source of inspiration for this discussion, although one also finds a few items that are directly based on the *Maqāṣid*, as well as one taken from Ibn Sīnā's *Najāt*. The preference for al-Fārābī's work is almost certainly not arbitrary. Especially in his elaboration of the fourteen moods, al-Ghazālī accepts many particularities of that work's wording, as e.g., the specific proofs offered for BAROCO and BOCARDO. With al-Fārābī's *al-Qiyās as-ṣaghīr*, he establishes the latter by *ekthesis*, limiting himself to a class-three

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9. I owe this observation to W. Hallaq, see his translation of IBN TAYMIYYA, *Against the Greek Logicians*. Oxford, Clarendon Press, 1993, p. 45-46, §61, note 2.
10. Other examples are present p. 92, 1 [the thief and the necessity to cut him (of one precise part of his body) and the necessity not to cut him (of other parts)]; p. 92, 6-7 [power or non-power over the woman — the former being sexually (related to her vulva), the other materially (related to her possessions)]; 93, 4-5 [wine is forbidden or legal (according to different periods — before or after the revelation of its interdiction)]. Note moreover that al-Ghazālī (p. 93, 1) insists that one finds many errors in legal reasonings due to the fact that one does not take into account that one predicate may be related in different ways to a single subject.

predication and using concrete terms¹¹. Most probably based on his direct knowledge of Aristotle's logical writings, he only accepts the existence of three figures¹². He might moreover have been inspired by an already existing — apparently conscious — rejection by al-Fārābī and/or Ibn Sīnā of the fourth figure¹³. Whatever be the case, he remains completely silent about the fourth figure.

Again, a few remarks may be added:

1. nearly everywhere in this section, al-Ghazālī illustrates each particular kind of syllogism not only with typically philosophical examples, but also with examples belonging to the domain of law, *fiqh*;
2. *tamthīl*, “reasoning by analogy” is explicitly identified by al-Ghazālī (p. 119, 15-6) with the *terminus technicus* “*qiyās*” in *fiqh*¹⁴, and with the technical expression *radd al-ghā'ib ilā l-shāhid*, “to bring back the hidden to what is present”, more commonly designated as *al-istidlāl bi-l-shāhid 'alā l-ghā'ib*, “proof of the hidden by what is present” in *kalām*¹⁵. These identifications show that a particular item might in al-Ghazālī's view be expressed by several terms. In this way, he is able to valorise

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11. For Farābī's view, see LAMEER J., *Al-Fārābī and Aristotelian Syllogistics. Greek Theory and Islamic Practice* (I.P.T.S., 20). Leiden – New York – Köln, Brill, 1994, p. 117-18 and 122.
 12. Most significant in this respect is the fact that his enumeration of the categories (see AL-GHAZĀLĪ, *Mī'yār al-'ilm fī fann al-mantiq*, p. 77, 1-9) is almost *verbatim* the same as that of the Arabic translation of Aristotle's work, see ARISTŪ, *Kitāb al-ma'qūlāt*, in A. Badawi (ed), *Manṭiq Aristū*. Kuwait, Wikālat al-maṭbū'āt; Beirut, Dār al-qalam, 1980, p. 1, 31-76, p. 35, 14 – 36, 3, corresponding to Aristotle's *Categories*, I b 25-7.
 13. For al-Fārābī's rejection of the fourth figure, see SABRA A.I., «A Twelfth-Century Defense of the Fourth Figure of the Syllogism», *Journal of the Warburg and Courtauld Institutes*, 28 (1965), p. 14-28, p. 19. LAMEER, *Al-Fārābī and Aristotelian Syllogistics*, p. 126, doubts Sabra's interpretation; according to him, al-Fārābī's simply ignored the fourth figure, but he offers no real argument in favour of his thesis. Regarding Ibn Sīnā, he, in his *Ishārāt* (see IBN SĪNĀ, *Al-ishārāt wa l-tanbīhāt*, ed. S. Dunyā. Cairo, Dār al-Ma'ārif, 1971, p. 1, 384-85; English translation INATI, SHAMS C., *Ibn Sīnā. Remarks and Admonitions. Part one: logic* (Medieval Sources in translation, 28). Toronto, Pontifical Institute of Mediaeval Studies, 1984, p. 134) evokes the fourth figure, without qualifying it as such, by presenting it as the “converse” of the first figure. However, Ibn Sīnā notes that it is remote from our nature and that a doubly hard effort is required in order to draw a conclusion from it. Afterwards, he only discusses the classical three figures.
 14. It has to be noted that *qiyās* constitutes the technical term for “syllogism” in philosophical logic!
 15. For al-Ghazālī's conception of *qiyās* as a term of *fiqh*, see BRUNSCHVIG R., «Valeur et fondement du raisonnement juridique par analogie d'après al-Ghazālī», in *Études d'islamologie*. Paris, Maisonneuve, 1976, 363-94, especially p. 366-67 and ID., «Logic and Law in Classical Islam», in G.E. VON GRUNEBaum (ed), *Logic in Classical Islamic Culture*. Wiesbaden, Harrasowitz, 1970, p. 9-20, p. 16-20. As to the *kalām*(ic) notion of the “proof of the hidden by what is present”, see VAN ESS J. (1970), «The Logical structure of Islamic Theology», in *ibid.*, p. 21-50, p. 34-5, where it is stressed that the expression translates in the Arabic translation of Galen's *On Medical Experience*, the Greek term of *analogismos*.

the idiomatic language that is proper to a given discipline, but, at the same time, to indicate how one can move from one discipline to another. In the present case, he clearly opens the way for the introduction of (philosophical) logic in the two domains of *fiqh* and *kalām*;

3. al-Ghazālī indicates the importance, but also the limits of analogy for legal reasoning, paying particular attention to such notions as *mujtahid*, “the one who exercises personal reflection” (p. 126, 14; 127, 7) *murajjih*, “element of preponderance” (p. 129, 6) and *ṭard maḥḍ*, “pure coextensiveness” (128, 9), i.e., perfect equivalence between definition and definiendum¹⁶. He evokes moreover six possible cases that allow analogy.

The second part of the second book of the *Mi'yār* is devoted to the matter of the syllogism. Al-Ghazālī starts with a brief evocation of the famous distinction between assent (*taṣḍīq*) and conception (*taṣawwur*) (the latter mainly indicating the grasp of the essence or quiddity of a thing, while the former concerns the affirmation or denial of the existence of a thing conceived), on the one hand¹⁷; and of the four degrees of certainty one may arrive at (demonstrative, dialectical, sophistic, rhetorical), on the other. As to the poetical syllogism, it possesses according to al-Ghazālī no truth-value whatsoever, its only goal being to influence the soul. This introduction has no clear source-text, but is reminiscent of some affirmations of the *Najāt*. It contains moreover one part, i.e., regarding the degrees of certainty, which is almost identical to the *Maqāṣid*. After these introductory remarks, al-Ghazālī distinguishes between three kinds of premises, i.e., (1) those which are certain (*yaqīn*), (2) those which are not certain but legally valid, and (3) those which are not certain and misleading.

16. For the former of the three notions, and its historical significance in the different legal schools, see MACDONALD D.B. and SCHACHT J., art. *Idjtihād*, in *Encyclopedia Islamica*, 2. Edition. Leiden, Brill, 1971, t. III, 1052-3. Regarding the term *murajjih*, see GARDET L., *Dieu et la destinée de l'homme* (Études musulmanes, 9). Paris, Vrin, 1967, p. 74-5; it rather belongs to the context of *kalām*, see e.g., SCHMIDTKE S., *The Theology of al-'Allāma al-Hillī* (D. 726/1325) (Islamkundige Untersuchungen, 152). Berlin, Klaus Schwartz Verlag, 1991, p. 122, quoting al-Hillī. It might be worthwhile to mention that IBN SĪNĀ, *al-Ta'liqāt*, ed. A. Badawī. Cairo, G.E.B.O., 1973, p. 50-3 mentions several times this term in a discussion of divine will and *qadar*. Finally, as far as concerns the notion of *ṭard*, see IBN TAYMIYYA, *Against the Greek Logicians*, p. 10, §15, n. 1.

17. For the distinction between assent (*taṣḍīq*) and conception (*taṣawwur*), see e.g., LAMEER J. (introd., transl. and comm.), *Conception and Belief in Ṣadr al-Dīn Shīrāzī* (ca 1571-1635). Al-risāla fī l-taṣawwur wa-l-taṣḍīq. Tehran, Iranian Institute of Philosophy, 2006, p. 3-77 (see also my CR of this work in *Bibliotheca Orientalis*, 65⁽¹⁻²⁾ (2006), p. 258-62). See, moreover, MARŌTH M. (1990), « *Taṣawwur and taṣḍīq* », in S. Knuuttila, R. Työrinoja and St. Ebbesen (eds), *Knowledge and the Sciences in Medieval Philosophy* (Luther Agricola Society, Series B, 19). Helsinki, Yliopistopaino, 1990, p. II, 265-74; and BLACK D. (1990) *Logic and Aristotle's Rhetoric and Poetics in Medieval Arabic Philosophy* (I.P.T.S., 7). Leiden – New York – København – Köln, Brill, 1990, p. 171-78.

The former category is divided into four subgroups: (1a) primary propositions (*awwaliyyāt*), (1b) observational ones (*maḥsūsāt*), (1c) experiential ones (*mujarrabāt*) (al-Ghazālī includes among them the “intuitional ones, *ḥadsīyyāt*) and (1d) ones known by mediation, more commonly known as propositions implying the “syllogistic” element (i.e., the middle term) (*al-qaḍāyā allatī qiyāsahā mā‘abā*). The second category is open to a threefold distinction: (2a) widely-known propositions (*mashūrāt*), (2b) received ones (*maqbulāt*) and (2c) presumed ones (*maznūnāt*). As to the third category, it also entails a triple division: (3a) purely estimative propositions (*al-wahmiyyāt aṣ-ṣirfa*), (3b) fictitious propositions (*al-mukhayyalāt*) and (3c) erroneous ones (*al-aghblāt*). For these different kinds of propositions, Ibn Sīnā’s *Ishārāt* form the basic source-text, but one may note additions from both *Najāt* and *Maqāṣid*. Eventually, al-Ghazālī sharply distinguishes between rational and legal syllogisms (while insisting that the difference between them does not concern the form, but the matter of the syllogism) and offers moreover a fourfold classification of the legal syllogism (*qiyās fiqhī*). He bases the latter on their different ways of application¹⁸: unrestricted (universal implying universal); based on a paradigm (*mithāl*) (particular implying particular); restricted (universal implying particular) and amplified (particular implying universal). This final note on the legal syllogism is directly based on al-Fārābī’s *al-Qiyās aṣ-ṣaghīr*. It may be worthwhile to add that Ibn Sīnā, contrary to al-Fārābī, never seems to have elaborated on this particular topic. Although this does not show nor prove that he disagreed with his predecessor, it might express his will to limit himself to what belongs to the pure domain of philosophy. I am well aware of the fact that the proper content of this section has its natural *locus* in the *Posterior* rather than the *Prior Analytics*¹⁹. Nevertheless, I have paid a particular attention to it because al-Ghazālī, at its very end, stresses, as already mentioned, that every legal reasoning must respect the formal rules of philosophical syllogistic theory.

In the third part of book two of the *Mi‘yār*, al-Ghazālī treats syllogistic errors, i.e., sophisms. Al-Ghazālī first discusses seven *loci* that characterize invalid syllogisms: (1) the lack of a correct form; (2) the use of a not concluding form; (3) a confusion between middle term and first term; (4) the misunderstanding of premises due to the presence of composed terms; (5) the use of erroneous premises according to either wording or sense; (6) the postulation of the thing one has to demonstrate and (7) the

18. LAMEER J., *Al-Fārābī and Aristotelian Syllogistics*, p. 242-56 qualifies these different ways as “situations” and characterizes them as unrestricted, restricted and amplified. Only the qualification of paradigm, *mithāl*, is explicitly attested in both al-Fārābī and al-Ghazālī.

19. E.g., the discussion of the different types of propositions occurs in the *Shifā’* in the *Book of Demonstration*, K. al-Burhān, see IBN SĪNĀ, *Al-Shifā’*, al-Burhān, ed. A. ‘Afīfī. Cairo, Government Press, 1956, Book I, Chapter 4, p. 63-67.

use of premises lesser known than the conclusion (implying a *petitio principii-dawra*). This part is directly inspired by Ibn Sīnā's *Najāt*. Hereafter, al-Ghazālī shows why those who doubt the validity of syllogistic theory are wrong. He mentions three doubts regarding the form of the syllogism, which have to do with the rules of conversion of propositions, or with the concluding nature of the first figure. Then, he concentrates on objections dealing with its matter (on several occasions he here refers to what he has said earlier) — al-Ghazālī insists that many premises are accepted without having been proven necessary. Finally, he makes it clear that the conclusion of a syllogism offers a knowledge that is superior to that of the premises, since it involves a passage from potency into act. For most of this part, no precise source has been found. However, the very first point (regarding conversion of the negative universal, and the implied need to retain subject and predicate in their respective identities) resembles a fragment of the *Maqāsid*. It mentions moreover an objection against the possibility of this conversion, based on an example which is also present in Ibn Sīnā's *al-Qiyās* of the *Shifā'*, namely that "no wall is in the stake" cannot be converted to "no stake is in the wall"²⁰. Both Ibn Sīnā and al-Ghazālī point out that in the latter case the precise predicate is "in the wall", not simply "the wall", so that the real conversion is as follows: "nothing of what is in a stake is a wall". As to the final remark that the conclusion actualises what is in potency in the premises, it is directly inspired by the latter's *Najāt*. It could be noted that al-Ghazālī pronounces at the very end of this complete section a strong condemnation of blind imitation, *taqlīd*²¹.

The last section of book two concerns "demonstration" proper, and therefore, I omit its discussion here. Let me just observe that al-Ghazālī (p. 178, 3 – 180, 2) identifies the two forms of *qiyās*, "analogy", i.e., by *'illa*, "cause", and by *dalāla*, "sign" with the two logical ways of *burhān*, "demonstration", i.e. *al-lima*, "(demonstration) why", and *al-inna*, "(demonstration) that"²².

From what precedes, it is clear that al-Ghazālī, in his *Mi'yār*, presents what one may call in a somewhat simplified manner "a peripatetic theory of syllogism".

20. IBN SĪNĀ, *al-Shifā', al-Qiyās*, ed. S. Zayed. Cairo, Government Press, 1964, Book II, Chapter 1, p. 87, 1-6.

21. For the importance of this idea in the thought of al-Ghazālī, see FRANK R., «Al-Ghazālī on *Taqlīd*. Scholars, Theologians, and Philosophers», *Zeitschrift für Geschichte der arabisch-islamischen Wissenschaften*, 7 (1991/92), p. 207-52.

22. MARMURA M. E., «Ghazali and Demonstrative Science», *Journal of the History of Philosophy*, 3 (1965), p. 183-204, p. 189-91 (now reprinted in ID., *Probing in Islamic Philosophy. Studies in the Philosophies of Ibn Sina, al-Ghazali and Other Major Muslim Thinkers*. Binghamton, New York, Global Academic Publishing, 2005, p. 231-60, p. 238-40), offers a more detailed account of both types of demonstration as understood by al-Ghazālī.

However, the introduction of the *Tabāfut*, specified that the concerned work offered an exposé "in the language of the philosophers". So, one may wonder whether the *Mi'yār* really represents al-Ghazālī's genuine logical insights? In view of the fact that he, in the very same introduction, insists that *nazar*, "reflection" is the term the adepts of the *kalām* use for expressing "logic", it could be that his most profound thoughts on this matter are revealed in another of his logical writings, i.e. *Mihakk al-nazar*, *The Touchstone of Reflection*²³.

A closer analysis of this work reveals however no fundamental change in the basic doctrine. One detects now and then a certain modification only at the level of terminology. In fact, what al-Ghazālī brought to the fore in the classical language of philosophical logic in the *Mi'yār*, he now articulates in terms of *fiqh* (and/or *kalām*).

Regarding the doctrine of propositions, one finds almost the same exposé, although the evocation of the three kinds of propositions, i.e., predicative, connective conditional and disjunctive conditional, has not been retained. There are moreover a few minor omissions, as e.g., the place of the negative operator in a proposition, as well as a few changes in order, as for example in the enumeration of the conditions, which have to be fulfilled in order to obtain a real contradiction. However, the basic ideas remain identical in spite of differences in the technical vocabulary. Thus the following correspondences show up between the two works²⁴:

<i>Mi'yār</i>	<i>Mihakk</i>
79, 14 – 80, 3	23, 10-9
83, 9-13	23, 5-9
86, 8 – 88, 2	24, 7 – 25, 14
88, 3-8 and 90, 5-11	25, 15 – 26, 10
90, 12 – 94, 7	26, 11 – 29, 16
94, 8 – 96	29, 17 – 31, 3.

In the version of the *Mihakk*, one point deserves special attention: when he starts to mention the distinction between subject and predicate (p. 23, 10-14), al-Ghazālī specifies no less than four ways to designate these two "items": grammatical (*mubtadā'*

23. There exist different editions of this work, see DAIBER H., *Bibliography of Islamic Philosophy*, p. 349, n° 3510. References are as usual given in such a way that the reader can easily identify them. Every time a precise pagination is given, the reference is to the edition by M. al-Na'sānī al-Ḥalabī i.e. AL-GHAZĀLĪ, *Mihakk al-nazar*. Cairo, s.d..

24. In the *Mihakk* all the passages form together the third chapter of the first *fann* of the first part dealing with the syllogism.

– *khābar*), *kalāmīc* (*mawṣūf*–*ṣifa*), legal (*ḥukm* – *maḥkūm*) and (philosophic) logical (*mawḍūʿ* – *maḥmūl*). As already has been argued before, such “identifications” on the level of content between several domains of thought, reveal an awareness in him of a common rationale beyond the differences in terminology. Finally, a last remark imposes itself: the present part of the *Miḥakk* has been almost *verbatim* copied in the introduction of the *Mustasfāʾ* (p. 35, 14 – 37, 16), a late work by al-Ghazālī on *fiqh*²⁵. But it has to be stressed that in the latter work, the sections on the distinction between necessary, possible and impossible, on the one hand, and on conversion, on the other, have been omitted.

As far as concerns the part on the form of syllogism, it is also almost totally present in the *Miḥakk*, be it in a slightly modified version. It is true that the very notion of *khalf*, “*deductio ad/per impossibile*” is not discussed, and a few remarks on the exhaustiveness of induction or on the determinateness/indeterminateness of the definite article have been omitted. As to the fourteen valid moods, they are not mentioned as such, but al-Ghazālī (p. 31, 5 – 39, 3) explicitly concentrates on the order of the terms of the syllogism and its significance for the latter’s validity. Hence, we have the following table of comparison²⁶:

<i>Miʿyār</i>	<i>Miḥakk</i>
98, 13 – 101, 5	31, 8 – 34, 6
111, 15 – 112, 25	39, 4 – 42, 15
113, 13 – 114, 13	42, 16 – 44, 11
115, 11 – 117, 4	62, 9 – 64, 1
123, 7 – 130, 6	84, 10 – 91
130, 7 – 131, 16	58, 9 – 60, 6.

Also in the present case, a shift in terminology can be observed, e.g. instead of *al-ḥadd al-awsat*, “the middle term”, al-Ghazālī now uses the usual *fiqh*-term of *illa*, “reason” (e.g., p. 31, 9), and instead of *shakl*, “figure”, he now makes mention of *naẓm*, “arrangement” (e.g., p. 31, 5). He also replaces the notion of *shartī manfaʿil*, “disjunctive

25. My references are to the anonymous Cairo-edition, i.e., AL-GHAZĀLĪ, *Al-mustasfā min ʿilm al-uṣūl*. Cairo, Governmental Press, 1904. For a general outline of the *Mustasfāʾ*’s derivations from the *Miḥakk*, see JANSSENS J., «CR. of Fr. Griffel, *Apostasie und Toleranz im Islam*», *Journal of Islamic Studies*, 14 (2003), p. 69-72, p. 71.

26. In the *Miḥakk*, the first three fragments form the object of the first section of the second *fann* of the syllogistic part of the *Miḥakk* (on the *maqāsid* of the *qiyās*); the fourth and sixth fragments do constitute more or less the first two chapters of the third *fann* (dealing with the *lawāḥiq* of the *qiyās*), and, finally, the fifth fragment covers the sixth chapter of the very same third *fann*.

conditional” by that of *ta'ānud*, “opposite apposition” (e.g., p. 42, 18)²⁷. But such changes not in any way his understanding of the underlying phenomena, and thus there is no fundamental divergence on the level of the basic doctrine. And as mentioned, the text of the *Mihakk* has been reproduced in the *Mustasfā* (p. 37, 17 – 52, 4 — but a few additions are present in these pages), although with one omission, i.e. the fifth section on *tamthīl*, analogy. Note however that instead of the term *qiyās*, one finds in the latter work *burhān*, which is in philosophical works the *terminus technicus* for “demonstration” proper. In this respect, al-Ghazzālī’s specific use in the *Mustasfā*, i.e., as a synonym of *qiyās*, is rather surprising and undoubtedly confusing.

Regarding the matter of the syllogism, large parts are once again (quasi-) identical, at least as far as the contents is concerned, between the *Mihakk* and the *Mi'yār*. However, no mention is made in the former work of several kinds of propositions, i.e., those known by mediation; imagined (*mukhayyalāt*), erroneous and intuitive ones. Moreover, no attention is paid to the distinction between rational and legal syllogism, or to the fourfold classification of the latter. Finally, it has to be observed that the received and presumed propositions are taken together under, or should one say replaced by, the common appellation of *al-tawātur*, “transmitted by unanimous tradition”²⁸. Taking into account these facts, one may establish the following correspondences²⁹:

<i>Mi'yār</i>	<i>Mihakk</i>
134, 13 – 136, 18	108, 13 – 109, 17
138, 4 – 149, 8	47, 12 – 58, 6

This time, the texts of *Mustasfā* (p. 21, 18 – 22, 11 and 44, 12 – 49, 10) and *Mihakk* are almost identical.

27. “Opposite apposition” constitutes a very tentative translation into English of the complex Arabic term *ta'ānud*. MCCARTHY R. J. (1980) *Freedom and Fulfillment, An Annotated Translation of al-Ghazālī's al-Munqidh min al-dalāl and Other Relevant Works of al-Ghazālī*. Boston, Twayne Publishers, 1980, p. 304 (title of sixth chapter) gives simply “opposition”, whereas JABRE F., *Essai sur le lexique de Ghazali* (Publications de l'université libanaise. Section des études philosophiques et sociales, v). Beyrouth, Librairie orientale, 1985, p. 211 proposes in French: “procédé par affrontement”.

28. The term of *tawātur* is directly derived from Ibn Sīnā's *Ishārāt*, and so also the explanation that follows, see IBN SĪNĀ, *Al-ishārāt wa l-tanbihāt*, p. 1, 349; English translation INATI, *Ibn Sīnā. Remarks and Admonitions. Part one: logic*, p. 121.

29. The fragments of the *Mihakk* represent a part of the first *imtiḥān* of the second *fann* of the part on definition, respectively the second chapter of the second part dealing with the *maqāsid* of the *qiyās*.

The section on sophisms of part three of book two of the *Mi'yār* is reproduced in the *Mihakk*, although in a different order and with modifications in the wording. Once more, no real doctrinal change seems to be implied. The section on doubting the validity of syllogistic theory has been omitted, while that affirming the involvement of a higher knowledge in the conclusion than in the premises, has been differently worded — this time, the change in wording is rather important (instead of “a third knowledge added to that of the premises” mention is made of “the intellection [*tafāṭṭun*] of the potential existence of the conclusion in the premise”), but at first sight the ultimate perspective remains the same³⁰. This given, one may relate the following passages³¹:

<i>Mi'yār</i>	<i>Mihakk</i>
154, 14 – 155	76, 12 – 78, 18
156, 1-15	79, 1-6
156, 16-21	81, 16 – 82, 7
156, 22 – 158, 4	79, 16 – 80, 14
158, 5 – 159, 15	74, 8 – 76, 11
159, 16 – 160, 5	80, 15 – 81, 15
160, 6 – 161, 9	82, 7 – 83, 2
169, 13 – 176, 22	64, 2 – 70, 5

Specially worth mentioning is the addition (p. 82, 13-5) of an example, taken from *kalām*, in order to illustrate a case of *dawra*, “petitio principii”, i.e., the proof for God’s existence based on the *muḥdith*-character (“originated character”) of the world. For al-Ghazālī this proof is not valid, since one cannot qualify the world as “originated” unless one has already accepted before the existence of God as its originator. Nothing of this section on syllogistic errors has been reproduced in the introduction of the *Mustasfā*³².

Regarding the two types of demonstration, al-Ghazālī once more offers basically the same doctrine in the *Mihakk* (p. 70, 6 – 72, 5) as in the *Mi'yār* (178, 3 – 180, 2),

30. To settle the matter definitely, a detailed systematic comparison would be needed, but would exceed the limits of the present study, all the more since al-Ghazālī distinguishes between four ways of how the knowledge of the conclusion is fully realized (generation [*tawallud*] for the Mu'tazilites; illumination of Agent Intellect according to the philosophers; by necessary concomitance in the opinion of the majority of the Ash'arites, or, for some Ash'arites, through God's power).

31. In the *Mihakk* the passages enumerated form together the fifth, respectively the third chapter of the third *fann* (related to the *lawāḥiq* of the *qiyās*).

32. In a similar vein as al-Ghazālī in the *Mustasfā*, al-Shahrastānī, in his *Book of Religions and Sects*, omits the discussion of syllogistic errors in the exposé of Ibn Sīnā's logic, which is based on the *Najā*.

notwithstanding their *prima facie* quite different wordings. Most significant however is al-Ghazālī's sole use in the *Mihakk* of the terminology *qiyās illati* – *qiyās dalālati*. The version of the *Mihakk* has been almost *verbatim* copied in the *Mustasfā* (p. 54, 13 – 55, 4), but al-Ghazālī there uses the technical expressions *burhān illati* and *burhān dalālati*, hence once more replacing *qiyās* by *burhān*³³.

From the preceding, it appears that al-Ghazālī's view on logic, and especially on syllogism, remained rather stable³⁴. A quick comparison between on the one hand *Mi'yār* and, on the other hand, *Mihakk* and *Mustasfā* shows that the logical doctrine of the former remains fully accepted in the latter works, notwithstanding some omissions

33. See *supra*, p. OO.

34. For the sake of completeness, the following correspondences between *Mi'yār* and *Mihakk* exist besides the ones already given:

<i>Mi'yār</i>	<i>Mihakk</i>
42, II – 45	9, 14 – 12, 3 (ways of signifying, and particularity and universality of words)
52, 2 – 57, 16	12, 4 – 16 (4 kinds of simple words)
59 – 62, 17	19, 3 – 23, 4 (perception and knowledge of external things)
62, 18 – 63, 9	17, 1-10 (on intentions)
64, 15 – 65, 18	17, 11 – 19, 2 (distinction between essential, accidental and concomitant)
69, 8-71, 4	94, 3 – 96, 17 (the three essential predicables)
182, 9-183, 11	92 – 94, 3 (the “four questions”)
194, 7 – 196, 5	96, 18 – 99, 14 (“true definition”)
199, 15 – 201, 15	99, 15 – 101, 15 (no demonstration of definition)
201, 16 – 203, 16	101, 16 – 103, 14 (errors in definition)

Let me note that in some cases the wording is almost identical, but not always. The first six fragments deal with words and intentions, and are presented in the *Mi'yār* and in the *Mihakk* as belonging to the “*muqaddimāt (sawābiq* according to the *Mihakk) al-qiyās*”, i.e., preparatory elements needed before one can start the exposé of syllogism proper. The last four fragments belong to what the *Mihakk* qualifies as “canons” of the definition (it has to be observed that the first of them figures in the *Mi'yār* among the *lawābiq*, “appendices” of the syllogism). Compared to the *Mi'yār*, the *Mihakk* omits a few items, as e.g., the degree of reality of the word, the issue of composed words, the distinctions between particular and universal things, and between concomitant and constitutive essential, and, finally, some considerations related to definition (i.e., the specificity of description, the very possibility of true definition, five different ways to consider a definition and the effort needed to establish a true definition). Moreover, regarding the predicables, its exposé is limited to the three essential ones.

But there seems also to be an addition in the *Mihakk*, compared to the *Mi'yār*. In its ultimate chapter, al-Ghazālī presents eight *imtihān*, “examinations” with respect to the definition. These examinations reveal precise difficulties that surround establishing a good definition, e.g., the risks of mistaken definitions or the possibility of one term having several definitions. To illustrate them, al-Ghazālī always offers concrete examples. For only two of them, i.e., “definition” (p. 109, 18 – 110, 11) and “intellect” (p. 111, 7 – 112, 4), I have found correspondences in the *Mi'yār* (i.e., ‘definition’: p. 194, 2-3 and 205, 1-2; ‘intellect’: 207, 22 – 208, 2). It therefore looks that al-Ghazālī has elaborated this chapter specifically for the *Mihakk*. But even if this is the case, it certainly does not mean that he has renounced Aristotle's logic. On the contrary, it shows his great familiarity with that logic.

and/or terminological modifications. Insofar as these latter works are works of *fiqh*, it is clear that al-Ghazālī wants to make the logic of the philosophers, especially its syllogistic theory, a tool in legal reasoning (as well as in *kalām*, as revealed by the “origination example”). The omissions do not put the basic project into danger, i.e., the development and realisation of a correct paradigm for reasoning in every domain of theoretical and/or practical knowledge. But is this not a too far-reaching conclusion? I do not think so. In fact, al-Ghazālī himself refers in the introduction of the *Mustasfā* explicitly to both *Mi'yār* and *Mihakk*, and this is also the case in his anti-bāṭinite work, the *al-Qiṣṭās al-mustaqīm*, “The Correct Balance”³⁵.

In the latter work, al-Ghazālī articulates in a very special language the predicative syllogism and its three figures, as well as the conditional conjunctive and the conditional disjunctive syllogism. The predicative syllogism is expressed in terms of balance (*mīzān*), divided into greater, middle and lesser. It may be noted that al-Ghazālī, as he had done in the *Mi'yār*, only takes into account the three figures, in accordance with Aristotle, as well as al-Fārābī and/or Ibn Sīnā as earlier stated³⁶. As to the conditional syllogisms, they are evoked by the terms *talāzum* and *ta'ānud*, “concomitance” (p. 26, 11), respectively, “opposite apposition” (p. 28, 15). In the rest of the book, al-Ghazālī condemns *taqlīd*, “blind trust”, but also concentrates on what causes erroneous conclusions. In the last chapter, he points to the dangers involved in trusting “analogy” (*qiyās*) or “personal opinion” (*ra'y*) too much. In all this, one hardly detects any real divergence with the more “technical” logical writings. On the contrary! Notwithstanding entailing many explicit references to the Qur'an and the extreme particularity of its vocabulary, the *Qisṭās* continues to defend a “philosophical” logic. Hence, it reveals the very same basic attitude as that present in all other logical writings of al-Ghazālī thus far analysed: an unconditional adherence to the logical project that had been developed in the peripatetic tradition, and that had its ultimate roots in Aristotle. Central to it was the theory of syllogism as the only correct way of reasoning. By combining elements of the two parts of Aristotle's *Analytics*, great attention was paid to correctness in both form and matter of the syllogism. Al-Ghazālī was aware of the scientific strength of such project. However, he realized that in legal questions, which often involve deontic aspects, the strict requirements of a correct syllogism could not totally be satisfied. However, following al-Fārābī, he was convinced that at least at the level of the form the same rules could be applied, and that

35. Concrete references will be to the following edition: of AL-GHAZĀLĪ, *al-Qiṣṭās al-mustaqīm*, ed. v. Chelhot, Beirut, Dār al-Mashriq, 1983. For other editions, and for translations, see DAIBER H., *Bibliography of Islamic Philosophy*, p. 348, n° 3503.

36. See *supra*, p. 00.

the difference concerned only the matter of the argumentation. So, for him the *Prior Analytics* were "prior", insofar as they offer the very basis for every kind of correct reasoning, be it legal, 'theological' or philosophical. It forms the best anti-dote to the poison of uncritical acceptance, or stupid imitation. For al-Ghazālī a correct way of reasoning is characteristic of the human capacity of thinking, and, as such, one of God's marvellous gifts. It therefore in no way can question, let alone contradict the data of Revelation. On the contrary, it constitutes an excellent means for understanding God's signs and commandments. It is a most valuable instrument in the search for truth, not to say: the Truth. In this sense, al-Ghazālī largely promoted logic for both domains of *fiqh* and *kalām*. Certainly, this does not make him a great logician. But he undoubtedly pointed people's attention to logic, and especially syllogism, as an extraordinary tool in the development of correct theoretical and practical knowledge³⁷.

37. Compare STREET, «Arabic Logic», p. 559: "Ġazālī was a promoter of logic, but not a practitioner".