

Ibn Sīnā's Two-Partite Versus Nine-Partite Logicography

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Abstract A tradition of writing and teaching logic came into existence in Islamic world on the basis of Aristotle's treatises both on logic and on topics related to logic, the most apparent manifestation of which was to represent logic in the form of a nine-partite system of logicography (according to eight treatises of Aristotle and Porphyry's *Isagoge*). Ibn Sīnā, as the most distinguished logician of the Islamic world, could combine both Aristotelian and Stoic legacy in logic with his own critical reflections on logic, first philosophy, and the relation between these two disciplines. Accordingly, he, as the most voluminous author in the field of logic, has presented both many books in the framework of Aristotle's work on logic and some different books, the most important of which is *al-Ishārāt wat-Tanbīhāt: Mantiq (Remarks and Admonitions: Logic)*.

In this book, Ibn Sīnā presents his early project in textbooks of logic according to his own conception of logic in its definition, relation with first philosophy, metaphysical foundations, tasks, topics or subject matters, and the appropriate structure of textbooks to manifest logic as it is or as it must be. Accordingly, *Ishārāt* became the manifestation of representing logic in an important non-Aristotelian manner: a manner that has been called two-partite system of logicography, with prevalence particularly in Eastern districts of the Islamic world.

In this paper, we will speak about Ibn Sīnā's innovations and achievements in logic as well as their advantages, all relying on some points taken from the history of logic.

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1 Introduction

Aristotle's books, in particular those on logic, were translated from Greek and/or Syriac into Arabic during the great movement of translation in the Islamic world.

Six books were accepted as related directly to logic. Two other books and a book written by Porphyry, on the basis of Aristotle writings, were added to the first six books so that the number of Aristotelian books on logic came to nine. Early Muslim logicians and philosophers received and accepted these nine books as the basis of both writing and teaching logic as an important tradition or style of logicography.

Ibn Sīnā adopted this style in his early works while he was taking a critical attitude towards the content and structure of logic in received tradition. He could make changes

both in the content and in the structure of logicography on the basis of some justifications, so that a two-partite style of logicography was brought out, with some advantages, alongside the traditional style. A great number of logicians, particularly in Western and Persian districts, adopted two-partite style, though there have been other logicians up to now who have made use of either nine-partite system or a combination of both systems.

Various justifications, from metaphysical to educational ones, have been set forth for the two-partite style of logicography. We will try to give a historical report as well as both logical and metaphysical foundations of Ibn Sīnā's against orthodox Aristotelian tradition in the Islamic world.

2 Aristotle's Books on Logic

Aristotle's *Organon*, having been received such a name in Byzantine Era, consists of 6 treatises: (i) *Categories*, (ii) *On Interpretation*, (iii) *Prior Analytics*, (iv) *Posterior Analytics*, (v) *Topics*, and (vi) *Sophistical Refutations*.

While Alexander of Aphrodisias (fl. 200 AD), the Peripatetic philosopher and the most leading commentator on the Aristotle's works, had not regarded the treatises *Poetics* and *Rhetoric* among Aristotle's writings on logic, Neoplatonist philosophers such as Ammonius Hermiae (c. 440–c. 520 AD) considered them as two books concerning logic. Accordingly, the number of Aristotle's books on logic was amounted to eight and included (vii) *Poetics* and (viii) *Rhetoric*.

Muslim logicians received such a legacy in logic and logicography with 8 parts. Thus, according to Fārābī, logic has 8 parts, as Ibn Nadīm, in a section concerning the parts and order of Aristotle's books on logic, speaks of 8 books (with their names) (Ibn Nadīm [7], pp. 453–454).

These treatises were translated from Greek and Syriac into Arabic by translators such as Ḥunayn Ibn Ishāq, Ishāq Ibn Ḥunayn, Yahyā Ibn 'Udayy, Abū Bishr Mattā Ibn Yūnus (Ibn Nadīm [7], 454–456).

The Neoplatonist philosopher Porphyry of Tyre (c. 234–c. 305), gathering some matters scattered in Aristotle works on logic (mainly from *Demonstration* and *Dialectic*), wrote an "introduction" to philosophy and logic that was called *Isagoge* (= Introduction) by him. Its Latin translation was the standard textbook on logic throughout the Middle Ages (Barnes [2], ix). This book was translated into Arabic by Ayyūb Ibn Qāsim Riqqī under the title *Isagoge fi al-Madkhal Ilā al-Kutub al-Mantiqīyyah* (Ibn Nadīm [7], 445 and 462). Muslim logicians added Porphyry's *Isagoge* to the eight Aristotle's treatises, so that the number of the books related to Aristotelian books on logic, rooted directly in Aristotle's legacy, has reached nine and included (ix) *Isagoge*. Thus nine-part/nine-partite logic, with 9 books listed above as its corpus, was accepted among Muslims as standard corpus of logic and logicography.

3 Logic in Ibn Sīnā's *Shifā* (= *Healing*)

In logic, Ibn Sīnā has made use of both Aristotle's and Stoics' legacy. Moreover, he has some contemplations, commentaries, and innovations (both in the contents and structures) of his own.

Ibn Sīnā has written about 15 treatises, the most important of which are

1. *ash-Shifā'*—*al-Mantiq*, *al-Madkhal* (*Healing: Logic, Isagoge*),
2. *ash-Shifā'*—*al-Mantiq*, *al-Qiyas* (*Healing: Logic, On the Syllogism*),
3. *ash-Shifā'*—*al-Mantiq*, *al-Burhan* (*Healing: Logic, On Demonstration*),
4. *an-Najāt*—*al-Mantiq* (*Deliverance: Logic*),
5. *Dāneshnāme 'Alāyī—Mantiq* ('*Alāyī Encyclopedia, Logic*),
6. *al-Ishārāt wat-Tanbīhāt—Mantiq* (*Remarks and Admonitions: Logic*), and
7. *Mantiq al-Mashriqiyyīn* (*the Logic of the Orientals*).

One may find in the order of the above books a development of logicography from a system based on the nine books listed above to the two-partite logicography style in which there is a structural evolution in presenting logic.

It must be noted that there are eight features in Muslims' scientology, called "eight headlines", that are important in discussing the characteristics of a science and its differences with other sciences. One of the eight headlines is "order of the sections". This feature relates to the structure of the matter presented as the corpus of a science. Accordingly, any change in a traditional structure of a science may be seen as an innovation.

In *Shifā'*, as a free representation and commentary of the nine-partite logic of Aristotle, Ibn Sīnā introduces logic in some "Techniques", each having some "Articles" with some "Chapters".

- **Technique 1**, the "Introduction" (*Madkhal/Isagoge*), contains 3 articles as follows:
 - **Article 1**, with 9 chapters, concerning discussions about sciences and logic, usefulness of logic, the subject matter of logic, definition of a simple word and a composite word, the essential and the accidental, essence, the types of the universal simple word, and genus;
 - **Article 2**, with 14 chapters, concerning relations of genres, the natural and the rational and the logical, and common accident;
 - **Article 3**, with 4 chapters, concerning the similarities and differences between the five universals.
- **Technique 2**. This section, under the title "categories" (= *maqūlāt*), contains 7 articles as follows:
 - **Article 1**, with 6 chapters, concerning the purpose of the categories, relations between the different words, accident, and both accident and substance regarding two different aspects;
 - **Article 2**, with 5 chapters, concerning the kind and the basis of division of the universal, and the number of the categories;
 - **Article 3**, with 4 chapters, concerning the first, second and third substances, universal and particular substances, and quantity;
 - **Article 4**, with 5 chapters, concerning quantity in accident, the properties of the quantity, and study of correlation (= *muzāf*);
 - **Article 5**, with 6 chapters, concerning quality and its types, passivities;
 - **Article 6**, with 14 chapters, concerning the types of the fourth genus of quality, accidents of quality, criticisms, where (or place), when (of time), and other categories;
 - **Article 7**, with 4 chapters, concerning opposites, criticisms on the oppositions, and contraries.

- **Technique 3.** This technique, “On Interpretation”, contains 2 articles as follows:
 - **Article 1**, with 10 chapters, concerning the knowledge of relevance between the affairs and the conceptions, definition of the simple words and the composite words, study of noun, word, statement, definition of a proposition, definitive discourse, the First indivisible, the types of the quantified/determinate propositions, on the truth and falsity of the quantified/determinate propositions, and contradiction;
 - **Article 2**, with 14 chapters, concerning dyadic and triadic propositions, on the validity of these relations between quantified contradictories, specific propositions, opposition between the affirmative and negative propositions.
- **Technique 4.** This section, under the title “syllogism” (= *qiyās*), contains 9 articles as follows:
 - **Article 1**, with 7 chapters, concerning the form of the syllogism, logic as a tool of philosophical sciences, on affirmation and negation, necessity and contingency and impossibility, contradictions between the premises, general absolute syllogism, criticisms;
 - **Article 2**, with 14 chapters, concerning conversion of premises, conversion of the absolutes, conversion of the necessities and the contingents, and conjunctive syllogisms and their three forms;
 - **Article 3**, with 5 chapters, concerning complex syllogisms, and contingent universal premise and its conversion;
 - **Article 4**, with 6 chapters, concerning possible syllogisms of the first form, complex syllogisms of the first form, possible syllogisms of the second form, complex syllogisms of the second form, and possible simple and complex syllogisms of the third form;
 - **Article 5**, with 5 chapters, concerning conditional syllogisms, disjunctive conditionals, simple and singular concepts in the conditionals, and the negative universal in the conditionals; and composite conditional combinations, universal and particular;
 - **Article 6**, with 6 chapters, concerning syllogisms made by conjunctive conditional in three forms, syllogisms made by conjunctive and disjunctive, and syllogisms made by conditional categorical in three forms;
 - **Article 7**, with 2 chapters, concerning correlation of conjunctive conditionals, the disjunctive conditional premises and opposition among some of them;
 - **Article 8**, with 3 chapters, concerning the definition of exceptive syllogism and its types, and syllogism per impossible;
 - **Article 9**, with 24 chapters, concerning the syllogism that its meaning is not complete unless being universal and affirmative, analysis of the syllogisms, situations preventing the analysis according to the form of the syllogism and the forms of the premises, induction, true premises implying true conclusion, demonstration in circle, conversion of syllogism, syllogisms made by opposing premises, petition of principle, conversion of the conclusions, on induction, and on analogy.
- **Technique 5.** This section, under the title “demonstration” (= *burhān*), contains 4 articles as follows:
 - **Article 1**, with 12 chapters, concerning the place of the book “*demonstration*”, foundations of deductions, from the knowns to the unknowns, certain knowledge, the validity of the premises of the demonstration;

- **Article 2**, with 10 chapters, concerning the foundations of demonstration and their universality and necessity, essential predicates, subject matters of the sciences, differences and similarities of the sciences, and relations of the premises of a demonstration;
- **Article 3**, with 9 chapters, concerning the difference of mathematical and nonmathematical sciences with dialectic, universal affirmative demonstration, difference and similarities of the sciences in principles and subject matters;
- **Article 4**, with 10 chapters, concerning “definition”, relation of definition to demonstration, and inclusion of causes as middle terms of the demonstrations.
- **Technique 6**. This section, under the title “dialectic” (= *jadal*), contains 7 articles as follows:
 - **Article 1**, with 10 chapters, concerning the knowledge of dialectical syllogism and its usefulness, the reason for its name, its definition, distinguishing dialectical syllogisms, the parts of dialectical syllogism, and generally accepted premises in dialectic;
 - **Article 2**, with 6 chapters, concerning the position of proof and falsification on the basis of the position itself or external affairs;
 - **Article 3**, with 4 chapters, concerning genus;
 - **Article 4**, with 3 chapters, concerning the property of dialectical syllogism and applying common positions in the property;
 - **Article 5**, with 5 chapters, concerning the first conditions for delimitation and definition, proving the definition and falsifying the property;
 - **Article 6**, with 1 chapter, concerning identity, otherness;
 - **Article 7**, with 4 chapters, concerning the quests of the one who asks of syllogism and induction.

4 Logic in Ibn Sīnā's *al-Ishārāt wat-Tanbīhāt* (= *Remarks and Admonitions*)

If we agree that it is possible to distinguish two periods of Ibn Sīnā's writings, in particular on logic, we should confirm that *al-Ishārāt wat-Tanbīhāt* (= *Remarks and Admonitions*) is his most important book belonging to the second period, although no one can give an exact date for writing of this book. While, as we said, logic in *Shifā* had been presented according to Aristotelian tradition, *Ishārāt* manifests the author's innovations in both division of logic and its topics. Ibn Sīnā briefly presents his own views in some sections under the title “*Ishārāt*” (= *Remarks*), while he gives some critical points concerning the views of other thinkers in sections called “*Tanbīhāt*” (= *Admonitions*).

Ibn Sīnā's *al-Ishārāt wat-Tanbīhāt* (= *Remarks and Admonitions*) has four parts: Logic, Physics, Metaphysics, and Sufism.

The book on logic, being the first book in the order, consists of 10 sections called “way/rightway/method” (*nahj*). We write its contents according to its English translation (Ibn Sīnā [12], pp. viii–xi), accepting the translator's word for “*nahj*” (i.e. “method”):

- **The First Method**, concerning the Purpose of Logic, containing 16 remarks on the knowledge of the composite as requiring knowledge of single elements, the logician's need for taking into consideration universal language, conception and assent,

the logician's need for knowing the principles of the explanatory phrase and proof, the expression as a sign for the concept, the predicate, the essential, the accidental, the concomitant accidental, the separable accidental, the constitutive essential, the non-constitutive concomitant, the non-concomitant accidental, the essential in another sense, that which is stated as the answer to the question "what is it", the various types of that which is stated as the answer to the question, "what is it?";

- **The Second Method**, on the Five Simple Terms, the Definition and the Description containing 8 remarks concerning that which is stated as the answer to the question "what is it?" as "genus", and that which is stated as the answer to the question "what is it?" as "species", the arrangement of genus and species, the difference, property and the common accident, the description of the five [terms], definition, description, the types of errors that occur in the identification of things by definition and description;
- **The Third Method**, on Assertive Composition containing 10 remarks concerning the types of propositions, affirmation and negation, singularity, indefiniteness and definiteness, the judgment of the indefinite proposition, the definiteness and indefiniteness of conditional propositions, the composition of conditional propositions from predicative ones, equipollence and positiveness, conditional propositions, the dispositions that accompany propositions, and that giving them specific judgments in definiteness and in other cases, the conditions of propositions;
- **The Fourth Method**, the Matters and Modes of Propositions containing 8 remarks concerning the matters of the modes of propositions, and the difference between an absolute and a necessary proposition, the mode of possibility, principles and conditions for the modes, the determination of the universal affirmative in the modes, the determination of the universal negative in the modes, the determination of the two particular propositions and the modes, the implication of modal propositions;
- **The Fifth Method**, on the Contradiction and Conversion of Propositions, containing 5 remarks concerning the contradiction between absolute propositions, and the determination of the contradictory of absolute and concrete propositions, contradiction in the remaining modal propositions, the conversion of absolute propositions, the conversion of necessary propositions, the conversion of possible propositions;
- **The Sixth Method** containing one remark concerning propositions, with respect to those involving assent, and similar ones;
- **The Seventh Method**, on the Beginning the Second Composition of Proof containing 7 remarks concerning the syllogism, induction and analogy, the syllogism, the conjunctive syllogism, the various types of predicative conjunctive syllogisms, the first figure, the second figure, and the third figure;
- **The Eighth Method**, on Conditional Syllogisms, and on What Follows the Syllogism, containing 4 remarks concerning conditional conjunctive syllogisms, the syllogism of equals, repetitive conditional syllogisms, the syllogism by contradiction;
- **The Ninth Method**, in which a Brief Explication of the Demonstrative Science is given, containing 6 remarks concerning the various types of syllogisms, with respect to their matters and their production of assent, the syllogisms and the demonstrative inquiries, the subjects, principles, questions [and transference of demonstrations] in the sciences, the correspondence of the sciences, causal demonstration and factual demonstration, the questions [in the sciences];
- **The Tenth Method**, On Fallacious Syllogisms.

5 A Comparison Between Logic in *Shifā* and Logic in *Ishārāt*

One may regard the first method of *Ishārāt* as equivalent to the “Introduction” (= *al-Madkhal* or *Isagoge*) of logic in *Shifā*. Of course, some topics have been explained in *Shifā* in detail (such as the Five Universals), while there is not enough place for the words, the essential, and the accidental. These topics have been broadly studied in *Ishārāt*.

In *Shifā*, Ibn Sīnā pays attention to the fact that there are some topics in the foundation of logic that are not parts of logic but they are parts of first philosophy. We emphasize here on first philosophy as the study of being qua being or, broadly speaking, the study of the essences as they exist in the mind or external to the mind. There have been three different attitudes towards the relation between logic and philosophy: Different followers of Aristotelian school of logic believed that logic is a tool for philosophy; the Stoics held that logic is a part of philosophy; and, according to Platonists, logic is a part of philosophy and, at the same time, a tool for philosophy.

He, in the *Introduction* (= *Madkhal/Isagoge*), speaks of the precursor's habit or practice to make long the foundations and preliminaries of logic with some topics that do not belong to logic but to first philosophy. He also speaks of another book (other than *Shifā*, i.e. *Falsafat ol-Mashrighīyyah/Philosophy of the Orientals/Easterners' Philosophy*) of his own having been written in which, contrary to his sympathetics (i.e. Peripatetic philosophers), the philosophical problems have been brought forth for discussion in accordance with the nature of the matter, avoiding the Peripatetics' method (Ibn Sīnā [9], *Shifā*, *al-Madkhal*, 9–12). In another place, he insists that he has avoided mentioning such problems, bringing them in their own appropriate place (Ibn Sīnā [13], *Burhān* (= *Demonstration*), p. 10). Ibn Sīnā has no commitment throughout the work to this view, so that he studies the categories in the techniques on logic. He goes on to say that he has another book in which he has presented philosophy according to his own specific view. He says explicitly that *Shifā* is more extensive and more sympathetic towards the Peripatetics (*ibid*). He is aware of the difference between his own style and predecessors' manners in writing the books on philosophy and logic: he wants to postpone some discussions concerning the universal affirmative proposition to the technique on syllogism according to habit or custom, although it is better to be stated in the third technique.

Moreover, it must be emphasized that while Ibn Sīnā's approach towards logic in *Shifā* is material, he has a formal approach towards logic in *Ishārāt*.

Even in his Persian book under the title *Dāneshnāme 'Alāyī* (= *'Alāyī Encyclopedia*), Ibn Sīnā has put the section on “Definition” before the section on “Propositions”, and his discussions concerning Dialectic, Rhetoric, and Poetics are very short (similar to corresponding discussions in *Najāt* (= *deliverance*)).

6 Ibn Sīnā's Reasons on Changing the Structure of Logic and the Style of Logicography

One's method in logicography is based on his/her definition of logic as Ansārī has said: “if you know why you should read logic, then you would know how you should read logic” (Ansārī [1], p. 320). We mention here only some main reasons for choosing two-partite logic and logicography.

6.1 Dividing Knowledge into Conception and Assent

Following al-Fārābī in his *Uyūn ol-Masā'el*, Ibn Sīnā proceeds by dividing knowledge into two types: (i) conception (*tasawwur*), being the mere imaging or grasping of an object without any judgment (the result of conception being called “concept”, with two types, simple and composite), and (ii) assent (*tasdīq*), presupposing conception.

Such a division is useful for discussing the purpose of logic. One may find this division even in *Shifā*. It must be said that if knowledge has two types, ignorance too has two types, ignorance in relation to conception and ignorance in relation to assent. The purpose of logic is to transfer from ignorance in one of the forms of conception and assent to knowledge in one of those two forms (*Burhān*, p. 18).

Such an approach reaches its perfection in *Ishārāt*. It is in this work that Ibn Sīnā gives appropriate names according to what is customary: “*It is customary to call the thing by means of which the sought concept is attained “an explanatory phrase”, which includes definition, description, and what resembles them; and to call the thing by means of which the sought assent is attained “proof”, which includes syllogism, induction, and their like.*” (*Ishārāt* 1984, p. 49)

According to such a view, concept brings out of concept and assent out of assent. This is the principal basis of two-part logicography, based on “definition” and “proof” as two types of thought. Ibn Sīnā’s *Isagoge*, and, indeed, *Isagoge* in the Islamic tradition of logic, is indeed the introduction to the logic of definition, while the study of propositions is introduction to the logic of proof.

6.2 Study of Categories as a Part of First Philosophy

Ibn Sīnā explicitly says in the *Categories* of *Shifā* that inclusion of the categories in logic is not correct since they belong to (i) first philosophy according to the quality and existence, (ii) natural philosophy or physics (as neighbor of first philosophy) according to their establishment in human mind, and (iii) lexicography according to the words used to refer to them (Ibn Sīnā [10], *Shifā: al-Maqūlāt*, 5–8).

In *Ishārāt*, Ibn Sīnā argues that though the First Teacher (i.e. Aristotle) opens his teachings with ten categories, they are not among the subject matter of logic. Indeed, they are first intelligibles, while the subject matter of logic is second (logical) intelligibles.

Ibn Sīnā says that the subject matter of logic are mental subjects, having no external correspondents, so that they are second intelligibles and predicates without any existence for them in the external world.

Logic, therefore, pays no attention to individuals (with external or mental existence) and the essences of the existents. It concerns the second (logical) intelligibles and mental concepts with the names such as predicates, subjects, universals, and particulars. Logic, of course, speaks of some meanings of the words, without any necessity of studying such matters as its task (Ibn Sīnā, *Shifā: Theology*, pp. 10–11, *Introduction*, pp. 22–23). He even insists that speaking of categories in logic is to be considered a mistake (Ibn Sīnā [11], *Ishārāt* 1971, Part 1, p. 43).

It must be said that Tūsī, in his commentary on *Ishārāt*, takes the nine-partite system in spite of his referring to the views of the moderns (i.e. logicians such as Ibn Sīnā, in

opposition to Aristotle as the precursor) in not regarding the specification of the natures of the universals and study of the objectivity of the existents (either substance or accident) as belonging to logic.

Yet, he insists that the art of definition and obtaining the premises of deductions is not possible without having conception of the categories and distinguishing the categories from each other. He is speaking as if the founder of the logic (i.e. Aristotle) himself has determined the place of the categories (as represented in the treatise *Categories*) to be the first book of the logic and logicography. Moreover, he emphasizes on the usefulness of knowing the categories in giving examples to make the explanation of a problem easy (Tūsī [16], p. 42).

Any way, it is evident that Tūsī, in spite of accepting the nine-partite style of logicography, agrees that categories are among metaphysical foundations of logic (i.e. they are not genuine logical problems), though so important that must be put at the beginning of logic and logicography. Categories, as first intelligibles or natural universals as the higher genres and accidents of the existents, are not the problems of logic but some of the foundations for it. Their entrance into logic depends upon the view of a logician concerning the inclusion of them in first philosophy or in any introduction to logic.

While following the precursors' method of logicography in *Shifā*, Ibn Sīnā discusses substances and accidents in the "*Theology*" (i.e. the section concerning first philosophy or metaphysics) of *Shifā*, too. It is in this book that he speaks explicitly of the fact that discussing such problems is not the task of the logician so that such undertaking for logicians is a deviation in his/her due course.

Finally, we add the words of Ibn Khaldun, in justifying the method of the moderns in eliminating the categories in their logicography: *the logicians consider the categories accidentally not essentially* (cf. Ibn Khaldun [6], vol. 2, pp. 1024–1028).

7 Two-Partite Logic Versus Nine-Partite Logic in the Islamic Tradition

The nine-partite logic and logicography, the corpus of which consists of the eight treatises of Aristotle and Porphyry's *Isagoge*, became an important tradition in writing and teaching logic in the Islamic world. It was adopted by Fārābī, Ibn Sīnā (before *Ishārāt*), Bahmanyār (Ibn Sīnā's disciple), Ibn Rushd, Ikhvān os-Safā, Tūsī, Qutb od-Dīn Shīrāzī, Dashtakī, Ansārī, and many other logicians as the principal tradition of Aristotelian logic in the Islamic world. This is the very tradition that Rescher has called the School of Baghdād (Rescher [15], p. 14).

Against such a tradition, the new approach towards the structure and contents of logic was extensively welcomed particularly in the Eastern part of the Islamic world (e.g. Persian world). The typical topics of the textbooks of logic, showing the style of lexicography and the structure of the texts, may be introduced as follows:

1. A compendious knowledge of logic
2. Study of the words
3. *Isagoge* of the five universals (an introduction to the logic of definition)
4. Definition
5. Propositions (an introduction to the logic of argumentation)

6. Syllogism (proof in general)
7. The five figures (i.e. demonstration, dialectic, sophistry, rhetoric, poetics)
8. Situation of sciences (logic of science and scientology)

Ibn Khaldun speaks of the new system of logicography attributing it to Fakhr Rāzī (Ibn Khaldun [6], p. 492). It is evident that he is wrong in such an attribution. His report shows the attitude of the famous theologians, philosophers, and logicians such as Rāzī.

In addition to Rāzī, the new system attracted Ghazālī, Suhrawardī, Urmawī, Khunjī, Abharī, Kātebī, Qutb o-Ddīn Rāzī, Allāmeḥ Hellī, Taftāzānī, and Mullā Sadrā.

Three of the logicians belonging to such “moderns” have had celebrated place in establishing and transferring bipartite style of logicography:

- (i) Afzal od-Din Khunjī (590–646). Khunjī has written some important famous books such as “*Kashf ol-Asrār an Qumūz al-Afkār*” (= *Disclosing the Secrets of the Complexities of Thoughts*). According to Farāmarz Qarāmalekī, Fakhr Rāzī, with his critical commentary on Ishārāt (called *Al-Enārāt fī Sharḥ al-Ishārāt* (= *Clarifications in Commentary on al-Ishārāt*), one of the many commentaries on Ishārāt and commentaries on commentaries on Ishārāt), is the leading intermediate between Ibn Sīnā and Khunjī. (Farāmarz Qarāmalekī 1373/1994, 46)
- (ii) Serāj od-Din Urmawī (594–682). Urmawī has a book, called *Bayān ol-Haqq va Lesān os-Sedq* (= *Expression of the Right and Language of the Truth*), to give an explanatory report of Khunjī’s book. He has written a short book called *Matāle’ ol-Anvār* (= *Rising Place of the Lights*).
- (iii) Najm od-Din Kātebī Qazwīnī (600–675) has written some commentaries on Khunjī’s and Rāzī’s books as well as some other books on logic including a very famous textbook under the title *Resāle-ye Shamsīyyeh* (= *Solar Treatise*) that has been read and taught for several centuries.

It is true that from the 7th (13th) century (after the Hejira, i.e. 13th century A.D.) onward two-part system of logicography became dominant in Iranian schools as the manifestation of the school in logic following Ibn Sīnā for which Nicholas Rescher chooses the name “Eastern School” (following Ibn Sīnā himself in calling the book of his late career *Mantiq al-Mashriqiyyīn* (= *Logic of the Orientals*)) in opposition to “School of Baghdad” or “Western School” with its nine-partite logic (Rescher [15], pp. 15–17). The school of Baghdad has been founded by Abu Bishr Mattā Ibn Yūnus, the translator of *Posterior Analytics* and the principal teacher of Fārābī. Accordingly, Rescher writes:

Ibn Sīnā’s call to study logic from independent treatises rather than via the Aristotelian texts met with complete success in Eastern Islam, where after the demise of the School of Baghdad, the formal study of Aristotle’s logical writings came to an end. (This abandonment of Aristotle may have been a requisite for the survival of Greek logic in Islam; a discipline that demanded study of works of an alien philosopher could probably not have survived.) Only in Muslim Spain did the tradition of Aristotelian studies of the School of Baghdad manage—for a time—to survive. (Rescher [15], p. 16)

Mohammad Taqī Dāneshpazhūh has reported that Vattier, the Latin translator of Ibn Sīnā’s *Najāt* in the 17th century, has spoken of the two systems of logicography (Qarāmalekī [5, p. 43]).

In recent years, some books on logic have been written in the framework of some combination of both systems of logicography without significant insistence on the history of the development of logicography. Hasan Malekshāhī [14], and Ahad Farāmarz

Qarāmalekī [3–5] have paid specific attention to the differences of the two systems of logicography.

8 Main Features and Advantages of Ibn Sīnā's Two-Partite Methodology in Logicography

One may sum up the main features of two-partite logicography as follows:

1. It regards logic as an independent art or technique not as a tool of sciences.
2. On the basis of division of thought into two parts (i.e. conception and assent), logic was divided into two parts: (i) logic of definition and (ii) logic of proof (of argument).
3. Matters concerning science were eliminated from “demonstration” and were attached to logic independently.
4. The detailed discussion on the Five figures (i.e. demonstration, dialectic, sophistry, rhetoric, and poetics) was eliminated, the elimination being justified on the basis of two principal end of logic: (i) obtaining truth and (ii) avoiding error ([8], Najāt, Arabic, p. 93).
5. There is no place for categories (as some parts of metaphysical foundations of Aristotelian logic) in such a logic because the foundations of a science as logic are not among its problems (being, in fact, the problems of a higher order science). The problems of each science are the rules and essential accidents of the subject matter of that science. According to Ibn Sīnā, the study of categories belongs to first philosophy. Categories are absent from Ibn Sīnā's *an-Najāt* (= *Deliverance*) *Uyūn ol-Hekmah* (= *Sources of the Sophia*), and *Mantiq al-Mashriqīyyīn* (= *Logic of the Orientals*). Ghzālī too regards the study of categories as a part of theology (i.e. general theology or first philosophy) in his *Maqāsid ol-Falāsefeh* (= *Aims of the Philosophers*), although he puts categories at the end of his *Me'yār ol-Ilm* (= *Criterion of the Knowledge*), a task that is followed by Rāzī in his *Resāle-ye Kamālīyyeh* (= *the Perfection Treatise*). It is interesting to know that while Ibn Sīnā has written the logic section of *Shifā* in accordance with the nine-partite system of logicography, he speaks of categories in philosophy section of *Shifā*, too.
6. The place of “definition” has been changed from the section on “demonstration” and “dialectic” in *Shifā* to a specific place before “propositions” or “interpretation” (as a part of the “concepts”, after the Five Universals) in *Ishārāt* (in a more systematic detailed and separated form).
7. Dialectics, Poetics and Rhetoric were eliminated. They found independence in combination with demonstration and sophistry under the title of the “Five Figures” (= *Senā'āt-e Khams*) as material logic (the Five Figures either have been eliminated, or have been studied at the end of the books on logic).
8. Some new definitions of logical concepts and issues such as “essential”, “three propositions”, “the quantified” and some others were represented.
9. There is an emphasis on the role of the words on the basis of the role of the language as reflection of the mind.
10. “Definition” attained independence.
11. Scientology, being distinguished from formal logic, was presented as an appendix.

On the basis of what was said, we may give a hint of some advantages of Ibn Sīnā's deviation from the tradition of the Aristotelians or the followers of the School of Baghdad in their representation of both contents and structure of logic and related textbooks:

- I Emphasis on Formal Identity of Logic
- II New Attitude Towards concepts of logic, particularly "Definition", on the Basis of New Foundations
- III Separation of Formal Logic from Material Logic: demonstration, dialectic, sophistry, rhetoric, and poetics (as the five figures) are the material logic of the proof. Accordingly, they must be separated from formal logic.
- IV Separation of Logic from First Philosophy
- V While Ibn Sīnā, in some places of his books (in particular his early works), speaks of logic as a tool of philosophy, he regards it as an independent discipline, though with its role in movement from the known to the unknown.
- VI Having good justification for readiness and fluency of both teaching and learning of logic, on the basis of natural manner of thinking.

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