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THE LOGIC OF AVICENNA FROM THE VIEWPOINT OF
AL-SHAHRASTANI

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Introduction

Al-Shahrastani[2] cites and utilise the ideas of those philosophers like al-Kindi, al-Nahvi, al-Makdisi, Ibn Miskawayh, al-Sarahsi and al-Farabi under the title of Islamic philosophers in his work *"Al Milal wa'l Nihal"*. He mentions that these philosophers are fundamentally followers of Aristotle. Al-Shahrastani implies that Avicenna is the wisest man who has the best philosophical system and developed the most distinct opinions about discussions on "the Truth" amongst the twenty philosophers he cited in his book. Al-Shahrastani expresses in his proposition "all preys are in the fur" that he covers Avicenna's fundamental views on logic. His other views can only be understood with the light of these views mentioned. Al-Shahrastani also covers the definitions of Avicenna's premise (wording), five universals, proposition, syllogism, the types of information used in syllogism, ten genus (categories), four reasons and certain concepts that logician needs.

Al-Shahrastani states that Avicenna divides knowledge into two categories: conception and assent. According to Avicenna, conception is the first information; that is to perceive something without positive or negative judgment as it is in the term 'human'. Assent is to pass either negative or positive judgment on something as it is seen in the proposition "Everything has a beginning". Every conception and assent is also divided into two as a priori (innate) and a posteriori (acquired). A priori conception and assent occurs without any need of theoretical and mental reasoning whereas a posteriori conception and assent requires theoretical and mental reasoning. Therefore, definition and syllogism are resorted at times in order to have conceptions and assents. According to Avicenna, definition and syllogism are a means of acquiring knowledge. One reaches the conclusion from known to the unknown through these means. A law is required in the degree of tools that should certainly be required

in order to reach true information and it is logic.[3] In Avicenna's view, logic is like syntax to a statement or like prosody to poetry.

1. Term (Concept-*Maſhum*)

Avicenna points out that a term (concept) signifies meaning in three ways: correspondence (mutabaqat), implication (tazammun) and necessity (iltizam). For instance; the word "wall" refers to a "wall" or the word "house" to a "house" in correspondence; the word "house" refers to "the walls of the house" in implication and the word "ceiling" refers to the "wall" in consequence.[4] In addition, a term is divided into two groups: simple (singular) and composite (compound). A simple (single) term refers to a single meaning as it is in the example of the term "human" and its component letters do not make any sense separately. On the other hand, a composite term is a term in which both the term itself and the components of the term make sense. For instance, the word "Abdurrahman" presents one meaning in a term as a name and concerning its opponents, both "abd" and "Allah" have separate meanings each.

According to Al-Shahrastani, Avicenna classifies simple term into two groups: universals (kull) and particulars (partial/cuz'). Universal term is also divided into two groups: personal and relational. Personal term puts forth the essence of a subject while relational term cannot deliver the essence; that is, it needs another term for its own existence.[5]

As Al-Shahrastani states, Avicenna classifies five universals as genus (jins), species (naw'), difference (fasl), accident ('arad) and proprium (khassah). A genus represents many things of different particular truths, answering the question "what is that?" while a species represents many things different in numbers, answering the question "what is this?". A difference answers the question "which thing is it?" by referring to the species underlying a genus of an object and a proprium answers the same question by referring to a species impersonally. As for an accident, it is a universal that is not particular (zhati) and includes many things jointly within the meaning. [6]

Al-Shahrastani covers Avicenna's views on the term "thing" under the title of "compound terms (wording)". Avicenna defines "thing" as a present object or its figure in its mind or a wording that refers to the image in one's mind or a script representing a term

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[3] Al-Shahrastani, *al-Milal wa'l Nihal* (transl. by Mustafa Öz), Istanbul 2008, p.366.
[4] See. Avicenna, *al--Işarat ve't-Tenbihat*, Istanbul 2005, p.4; İbrahim Çapak, *Ghazali's Vievs on Logic (Gazali'nin Mantık Anlayışı)* Ankara 2005 p- 34-35.
[5] Al-Shahrastani, *al-Milal wal Nihal* (transl. by Mustafa Öz), İstanbul 2008, p. 367. See. Avicenna, *al-Işarat ve't-tenbihat*, p. 5-6.
[6] Avicenna, *al-Işarat ve't-tenbihat, p.* 13 vd., *Kitabu'l-Nejat*, p. 7-10

(wording). While the first two of these do not differ among people speaking different languages, the last two definitions vary among people with different languages. The script refers to the term, the term to the image, and the image in mind refers to the present objects outside. Moreover, Al-Shahrastani states that the components of a statement are noun, word and preposition and defines each of them.

2. Proposition

Al-Shahrastani gives a definition of proposition according to Avicenna and explains the types of proposition briefly. Proposition not only implies relation between two things but also shows whether this relation is true or false. Al-Shahrastani defines propositions which are emphasized by Avicenna as predicative, conditional, definite (intentional), indefinite (vague), quantitative, simple, negative in its subject or predicate and declarative of absence.

Predicative propositions are composed of two subject matters and a predicate as it is seen in the proposition "the universe is posterior". Each of the subject and predicate can consist of sometimes singular or sometimes compound terms. [7] Conditional proposition contains more than one judgment in itself and includes pre-component (precedent) and post-component (subsidiary) which function as a predication and compose a new judgment; that is proposition by uniting with a conditional preposition. Conditional propositions are divided into two as conjunctive and disjunctive. Conjunctive conditional proposition is established with conditional preposition and the occurrence of post-component depends on the pre-component; e.g. "if sun rises, day occurs". On the other hand, disjunctive proposition includes "either or". While either one of pre-component and post-component occurs, the other one can not happen; that is, if either one of the components is true, the other one becomes false at the same time; e.g. "This number is either odd or even".

Definite proposition (mahsusa) has a certain, particular subject matter while indefinite proposition includes a universal subject matter where quantity of units is not specified. Quantitave proposition has a subject matter with a defined quantity. These propositions can be affirmative universal (A), negative universal (E), affirmative particular (I) or negative particular (O).

Simple proposition has a definite (muhassal) subject and predicate while a negative proposition has a negation in its subject or predicate; e.g. "Zeid is sightless." Finally,

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[7] See. Al-Shahrastani, *Ibid* p. 367.

proposition of absence implies a predicate that represents a lack of something; e.g. "Zeid is cruel."[8]

Contrary propositions have the same qualities but different quantities. Contradictories refers to the two propositions that are different from each other in terms of both quality and quantity. In such a case, one of the propositions is regarded as true and the other as false.

Al-Shahrastani points out that Avicenna emphasizes three modes of proposition: necessary, possible and impossible. "Necessary" refers to continuation of a being; "impossible" implies the continuation of a nonbeing; and "possible" refers to neither the continuation of a being nor the absence of a being; in other words, it means that something might both be and not be. Having defined necessary, possible and impossible propositions, Al-Shahrastani draws attention to the difference between material and modes (aspect) and shows the proposition "It is possible that Zeid is alive." Here, the material is necessary while the modality of the proposition is possible.[9] Possible proposition is used in two meanings: correspondence of impossible and of the one which is not necessary to exist or be absent. In other words, possible proposition is divided into two as particular possible and general possible. Al-Shahrastani states that modes of proposition in Avicenna's view are possible, impossible and necessary and they are also necessary, possible and absolute. Absolute proposition is defined as proposition that does not imply a mode, any necessity or possibility. It is also described as the proposition where the judgment is not permanent and depends on a time of period.[10] Conversion is to make the subject of a proposition a predicate or convert its predicate to subject without distorting its quality or quantity. Affirmative universal proposition is converted to affirmative particular; negative universal proposition to negative universal and affirmative particular proposition is converted to affirmative particular. Negative particular proposition cannot be converted since it can be sometimes true or false when converted.

3. Syllogism

"Syllogism is evidence consisting of propositions and whenever these propositions are accepted, another proposition necessarily emerges out of them."[11] If the necessity of a conclusion drawn from reasoning is explicit, it is called complete syllogism and if an

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[8] See. Avicenna, *al-Işarat ve 't-tenbihat, p.* 23 and others
[9] Al-Shahrastani, *Ibid.,* p. 368. See. Avicenna, *al-Işarat ve 't-tenbihat,* 30 vd.
[10] Al-Shahrastani, *Ibid.,* p.369.
[11] See. Avicenna, *Kitabu 'l-nejat,* Egypt 1938, p.31.

explanation is required, then it is called as deficient syllogism. Moreover, syllogism is fundamentally divided into two as predicative and conditional.

3.1. Predicative Syllogism

Predicative syllogism is a syllogism where the conclusion and the contradictory of conclusion are not explicitly mentioned. Predicative syllogism is composed of two premises with a common middle term and a conclusion; including three terms as middle, minor and major. The characteristic of middle term is that it establishes a link between premises so that a judgment can be made out of these premises. This judgment is called "conclusion". The subject of the conclusion refers to minor term and its predicate is major term. The premise including major term is called "major premise" and the one including minor term is called "minor premise".

If a middle term is a predicate in a premise and subject in another, the first figure; if it is a predicate in both premises, the second figure; if it is subject in both premises, third figure occurs. Therefore, Al-Shahrastani states that Avicenna mentions three forms, not four. In each of these three forms, any conclusion cannot be drawn from two particular and two negative premises. And the conclusion depends on the weaker one of the premises. In other words, if one of the premises is particular, the conclusion becomes particular or if one of them is negative, the conclusion also becomes negative. [12]

Al-Shahrastani also covers the conditionals of syllogism figures as follows: The condition of the first figure is that major premise should be universal and minor premise should be positive while the condition of the second figure is that major premise should be universal and one of the premises should be negative. And the condition of the third figure is to have a positive minor premise and a particular conclusion. Having delivered Avicenna's views on the related subject, Al-Shahrastani states that Avicenna's works should be consulted for detailed explanations about the types of syllogism.

3.2. Conditional Syllogism

Conditional syllogism refers to syllogism where the conclusion and the contradictory of conclusion are mentioned together. As Al-Shahrastani states, positivism and negativism are found in not only predicative syllogisms but also distinct and conjunctive syllogisms. The first premise of conditional syllogism consists of two predicative propositions. One of these predicative propositions is called pre-component (precedent) and the other one is called post-

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[12] Al-Shahrastani, *Ibid.*, p.370. See. Avicenna, *al-Işarat ve't-tenbihat, p.* 59-60.

component (subsidiary). The second premise of conditional syllogism becomes either similar or contradictory to pre-component or post-component.

The first premise of conjunctive syllogism consists of conjunctive proposition and its second premise is either similar or contradictory to the pre-component or post-component of the first premise. In conjunctive syllogisms, if the pre-component is assented and post-component is not assented, then the conclusion becomes false while it becomes true if the pre-component is not assented and pro-component is assented. Here is an example of a conjunctive syllogism:

> *If it rains, the ground gets wet*
> *It rained*
> *Therefore, the ground got wet.*

The first premise of disjunctive syllogism includes a disjunctive proposition and the second premise becomes either pre-component or post-component of the first premise as it is in conjuctive syllogisms. If pre-component is chosen as the second premise in disjunctive syllogisms, the conclusion becomes contrary to the post-component. If post-component is chosen, the conclusion becomes contrary to pre-component then or the second premise can be considered as contrary to pre-component and post-component. Therefore, four different conclusions emerge. If the premises are considered valid, every conclusion drawn becomes also valid. Here is an example of disjunctive syllogism:

> *Either the sun has risen or it is night*
> *It is night*
> *Therefore the sun has not risen.*[13]

3.3. Conjunctive Syllogisms

Syllogism with more than two premises is called conjunctive syllogism. They consist of more than one syllogism interconnected with each other. In this case, the conclusion of each syllogism within the conjunctive syllogisms is the premise of the other at the same time. True premises give true conclusions. Sometimes false premises might also lead to true conclusions, though.[14]

Al-Shahrastani mentions Avicenna's views on mixed (hulf) syllogism, induction and analogy briefly under the title of conjunctive syllogism. Avicenna defines mixed (hulf) syllogism as "showing the impossibility of the contrary of a proposition that needs to be proved and judging the accuracy of this proposition". Mixed syllogism includes conjunctive

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[13] See. Avicenna, *al-Işarat ve't-tenbihat*, 67-68
[14] Al-Shahrastani, *Ibid.*, p..371.

and disconjuctive syllogisms. Induction refers to judge the whole by its parts and does not represent universal knowledge. Analogy, on the other hand, is "to deliver the same judgment for the two things based on the similarity between them." Analogy is made between two particular or two universals.[15]

3.4. Premises of Syllogism

Al-Shahrastani mentions things that are perceptible through senses (al-mahsusat), empirically tested (al-mujarrabat), acceptable (al-makbulat), imaginary (al-wahmiyat), presumption (al-zanniyyat), disputes and deceptions (al-mukhayyalat), primary proposition/innate (al-awwaliyat), based on definite (al-yaqiniyyat) knowledge as the premises of syllogism:

Sense-Perceptible (al-mahsusat): They are things which require perception through senses.

Empirical (al-mujarrabat): They are things that are perceptible through sensation as well as syllogism.

Accepted (al-maqbulat): These are opinions that require the confirmation of a person whose accuracy is trusted. This is related to the person's distinguished or celestial strong idea or comment.

Imaginary (al-wahmiyyat): Opinions that require believing in the imaginary based on feelings.

Well known things (al-mashhurat): Renowned, widespread and praiseworthy opinions that need to be confirmed by everyone's testimony.

Presumption (al-zanniyyat): Opinions that are subject to acception by mind but not accepted always since its contrary can be thought.

Disputes and deceptions (al-mukhayyalat): These premises are to imagine something through imitation and resemblance of another thing, they are not said to be confirmed.

Primary propositions (al-awwaliyyat): These are propositions that require confirmation based on nothing else other than rational power.

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[15] See. Avicenna, *al-Işarat ve't-tenbihat*, 58-59.

166

Premises based on exact information (al-yaqiniyyat): These premises are composed through either inherence or empirical experience or perceptions.[16]

Having reviewed the premises used in syllogism, Al-Shahrastani also delivers the four questions which include yes/no questions, what?, why?, which? and called as *metalib* by Avicenna as well as Avicenna's views on these questions. He also draws attention to the function of these questions. Then, he dwells upon demonstration briefly, stating that demonstration is basically related to subjects, matters and premises and explains each of these in short. However, while Al-Shahrastani tries to mention Avicenna's views on demonstration, he covers the types of demonstration (causal demonstration and factual demonstration) under the title of one of the premises of syllogism, based on exact information. According to him, causal demonstration (burhan al-limmi) is evidence that causes the combination of two sides of conclusion in the being and mind. And factual demonstration (burhan al-inni) is evidence that causes the combination of two sides of conclusion in terms of mind and confirmation. Al-Shahrastani states that demonstration delivers exact judgment and dwells upon the relation between demonstration and definition. He defines definition as the thing that puts forth the nature of something and the definition of something is given by the thing that is known better, because the intention of definition is to make unknown things known.[17]

4. Ten Genus (Categories)

Al-Shahrastani classifies Avicenna's categories as quintessence, quantity, relation, quality, setting, time, situation, possession, effect and passive and gives definition of each of them. For quality and quantity, he does not only gives definition but also explains them in detail.[18]

Al-Shahrastani states that Avicenna divides causes into four categories: efficient, material, formal and final. Efficient cause is the primary source or principle of the action; e.g the cause of the chair is a carpenter. Material cause is the object that is needed to exist in order to generate the nature of something; e.g. tree is the material cause of the chair. Formal cause is the thing that exists in everything and does not emerge as long as the image does not combine with material; e.g the shape of the chair. And final cause explains the reason why a thing is made and the purpose of the thing; e.g. the purpose of building a house is to live in it.

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[16] See. Avicenna, *Kitabu 'l-nejat,* 61-65.
[17] Al-Shahrastani, *Ibid.,* p. 373-374.
[18] Al-Shahrastani, *Ibid.,* p. 375.

Al-Shahrastani concludes about Avicenna's views on logic, defining some terms that a logician might need to understand and use such concepts, presumption, knowledge, reason, mind, intelligence, intuition, feeling, allusion and imagination, idea, craft and wisdom.[19]

Conclusion and Evaluation

Al-Shahrastani focuses on the source of knowledge, single (simple) and composite terms, five universals, proposition, syllogism, induction, analogy, the types of information used in the premises of syllogism, ten genus (categories), the questions used to acquire knowledge and four causes in the context of Avicenna's logic. Al-Shahrastani summarizes Avicenna's views on these subjects and only gives definitions of related notions in most places. Therefore, it is quite hard to understand the subjects. It is also remarkable that Al-Shahrastani talks about four causes and four questions without linking them to the logic related subjects discussed.

While Al-Shahrastani discusses species (naw') among five universals and deals with middle species and categories of species in more detail, he only gives definitions of genus, difference, proprium and accident ('arad).

When books on classical logic are considered, it is seen that subjects such as "thing", "name", "word" and "particle" are immediately discussed at the beginning of the subject of term. On the other hand, Al-Shahrastani discusses them under the title of compound terms. Name, word and preposition gain importance for logic especially when they are combined to deliver a judgment which can be said to be true or false.

Al-Shahrastani treats definite proposition (mahsusa) as a particular proposition, he discusses simple proposition as a proposition with a definite subject. However, definite proposition is the one with a certain quantity while simple proposition is the one including a subject matter and a predicate.

Having discussed the types of predicative, conditional, definite, quantitative (mahsura) propositions, Al-Shahrastani dwells upon contraries and contradictories propositions and later mentions propositions that are single (simple), negative in subject or predicative and declarative of absence. This shows that the subjects are not dealt in a proper unity, because it would be more comprehensible to discuss reciprocal and contradictory propositions at the end of the subject of propositions and under the subject of relations between propositions.

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[19] Al-Shahrastani, *Ibid.*, p. 376-377

Concerning the modes of propositions, Al-Shahrastani discusses Avicenna's views discursively. For instance, he firstly divides the propositions into three as necessary, impossible and possible and then divides possible into two groups. Later, he classifies modes of propositions in three categories as necessary, possible and absolute. Books on classical logics show that the first classification is seen in Aristotle and the other classification is found in the first period Islamic logicians. Moreover, Al-Shahrastani discusses the relation between propositions discursively. For instance, conversion is not covered together with the contraries and contradictories propositions. He defines and explains how to apply conversion after discussing modes of proposition. And he touches upon only conversion, does not address to contraposition at all.

Concerning the first figure of syllogism, Al-Shahrastani states that "if the middle term is a predicate in a premise and subject matter in other, this means first figure". This statement also reminds the fourth figure because in fourth figure, middle term serves as subject in one premise and predicate in another. To clarify the issue, it is better to say "the first figure happens when middle term is subject in major proposition and predicate in minor proposition".

Under the title of premises of syllogism, Al-Shahrastani defines the premises that are perceptible through senses, empirically tested, acceptable, imaginary, presumption, disputes and deceptions, primary proposition, based on definite knowledge respectively. When works of both Avicenna and many other logicians are taken into account, it is seen that there are twelve types of information used in the premises of syllogism and six of these are used in demonstration and the other six types are used in dispute, rhetoric, poetry and sophistry. Al-Shahrastani neither discusses the entire types of premises used in syllogism nor gives information about which of the five arts these premises are used in.

Before giving the definition of demonstration, Al-Shahrastani mentions and defines types of demonstration causal demonstration and factual demonstration under the title of one of the premises of syllogism, based on definite knowledge. Then, he dwells upon four questions that he names as *metalib* and right after that he touches upon subject matters, issues and introductions that constitute demonstration (exact evidence). This situation indicates that while Al-Shahrastani has knowledge of logic, he ignores the relations and connections amongst the subjects of logic.

Al-Shahrastani sums up Avicenna's views on categories very briefly under the title of "ten genus". In fact, the subject of categories should be discussed in detail in terms of Avicenna because Avicenna relates categories to metaphysics rather than logic and usually

does not mention categories within the subjects of logic. Al-Shahrastani does not make any evaluation about this issue; rather, he only touches upon categories briefly.

In conclusion, Al-Shahrastani regards Avicenna as highly competent philosopher and considers his opinions as very important philosophical ideas. He delivers Avicenna's views on logic very briefly and therefore skips some information and examples that are important for the understanding of the subjects. This situation makes it rather difficult to comprehend the topics in discussion. In addition, Al-Shahrastani seems to deliver Avicenna's views on logic randomly rather than systematically enough to constitute an integrity.