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Singular Proposition (*Al-qaḍīyah al-Shakhṣīyah*) in Logic of the Islamic Period

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Abstract

Singular proposition (*al-qaḍīyah al-shakhṣīyah*) is a type of categorical proposition (*al-qaḍīyah al-ḥamlīyah*). Islamic logicians have paid close attention to defining, naming, and analyzing of singular proposition. From the works of logicians of Islamic period, eight features of singular propositions can be derived: constituency relation, unquantifiability, indivisibility into confirmation of the subject and confirmation of the object, indivisibility into factual/extrinsic propositions, inefficiency in categorical syllogism, not being convertible, having no value in *al-ʿulūm al-burhānīyah*, and truth of contradictory propositions in square of opposition.

Introduction

Understanding the historical development of logic in Islamic period[3] requires extensive, systematic studies which can lead to well-grounded explication and description of the course of development of Islamic logical thought over time. How to classify propositions was one of the issues that preoccupied the minds of logicians of the Islamic period. They offered different classifications for categorical propositions (*al-qaḍīyah al-ḥamlīyah*). In one classification, quantity is the basis for categorization. Taking quantity into account, categorical propositions are divided into four types: Singular proposition (*al-qaḍīyah al-shakhṣīyah*), generic proposition (*al-qaḍīyah al-ṭabīʿīyah*), indefinite proposition (*al-qaḍīyah al-muhmalah*), and determinate proposition (*al-qaḍīyah al-musawwarah*). The main objective of this research is to study the ideas of logicians of Islamic period

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with respect to their definitions and analysis of singular proposition. This study attempts to find the answers to following questions: How did logicans of the Islamic period define singular proposition? What are the terms used by logicians in order to refer to singular proposition? Why are those terms chosen? What are the features of singular propositions identified by logicians of Islamic period? Is singular proposition useful in sciences? Does it have any deductive value in categorical syllogism (*al-qīyās al-iqtirānī*)?

This research takes a historical approach to the aforementioned questions. Thus it analyzes the ideas of the logicians of the Islamic period by, first, giving a brief historical account of the development of singular proposition, and then, by reviewing its features.

History of singular proposition

Aristotle mentions singular proposition briefly in his discussion of opposite propositions in *De Interpretation*.[4] In *Prior Analytics*, which deals with the different types of categorical propositions, Aristotle limits his discussion to indefinite, universal, and particular propositions and leaves singular proposition unmentioned.[5] He says, 'A premise then is a sentence affirming or denying one thing of another. This is either universal or particular or indefinite. By universal I mean the statement that something belongs to all or none of something else; by particular that it belongs to some or not to some or not to all; by indefinite that it does or does not belong, without any mark to show whether it is universal or particular.' From this quotation follows that, in Aristotle's opinion, a proposition is either determinate universal, determinate particular or indefinite. Hence, singular proposition is absent from Aristotle's writing.

Al-Fārābī (260/870–320/950) compensated for Aristotle's lack of attention to singular proposition in *Kitāb al-Qīyās* (Book on the Syllogism). He does so by including it in his discussion of the different types of categorical propositions.[6] Although the general view of Muslim scholars is that Aristotle's discussion is not thorough because he left singular proposition out of consideration, I believe that Aristotle's discussion is both comprehensive and meticulous because as Yahya ibn Adī argues, Aristotle intended to elaborate on propositions that can be used as premises of syllogism. As a result, singular proposition was irrelevant to Aristotle's

classification.[7] In other words, singular proposition could play no logical roles in Aristotle's theory of syllogism.

Singular proposition, as al-Fārābī saw it, is a proposition the subject of which is either an individual[8] or concrete things[9]. By 'individual' al-Fārābī means someone for whom there's no possibility of finding other entities similar to him/her. That is to say, an individual cannot be a common concept which can hold for various entities. When Avicenna (370/980–428/1037) came to discuss singular propositions in his works, he used both '*al-qaḍīyah al-makhsūṣah*' and '*al-qaḍīyah al-shakhṣīyah*' in order to refer to singular proposition. In both *al-Ishārāt wa al-Tanbihāt* and *Kitāb al-Najāt*, he defines singular proposition as 'a categorical proposition the subject of which is a particular thing (*shay'juz'iy*).[10] This definition which is not at all in conflict with that of al-Fārābī is quoted verbatim in al-Lawkarī's *Bayān al-Ḥaqq*, too.[11] However, in *'Uyūn al-Ḥikmah* and *Dānishnāmā-i 'Alaī*,Avicenna considered the subject of a singular proposition to be a particular term (*al-lafẓ al-juz'iy*). [12] The change of expression from 'particular thing' to 'particular term' is significant as I'm going to explain why. In *Kitāb al-Shifā'*, Avicenna uses only the vague word 'particular' (*juz'iy*) instead of 'particular thing' or 'particular term' of his other books.[13]'Umar Ibn Sahlān al-Sāwī (504/1110-567/1171) mentions the same definition that Avicenna had given in *Kitāb al-Shifā'* in *al-Baṣā'ir al-Naṣīrīyah* and *Tabṣarah.*[14] Avicenna's pupil, Bahmanyār (d. 458/1066), gives this definition for singular proposition: 'every proposition the subject of which is an individual, is called *al-qaḍīyah al-makhsūṣah.*'[15] Scholars of last period (*muta'akhirīn*) accepted Bahmanyār's definition with slight modifications, the most important of which will be introduced presently.

Ibn Ḥazm (384/994-457/1064) writes in *Kitāb al-Taqrīb*: *al-qaḍīyah al-makhsūṣah* is a proposition that is about a specific individual.'[16] Elsewhere, he says, *al-qaḍīyah al-makhsūṣah* is a proposition that predicates of an individual or a certain group of individuals.'[17] This definition is significant because, in general, it is erroneously believed, as in case of Abu l-Barakat al-Baghdādī, that only one specific individual or person can be the subject of a singular proposition. For instance, Abu al-Barakat al-Baghdādī (473/1080-559/1164) defined singular proposition as 'a proposition the subject of which is one specific individual (*al-shakhṣ al-wāhid al-mu'ayyan*).'[18] Although there's no doubt that the subject of a singular proposition is an 'individual,' individuality does not refer only to one person. Rather, it can designate a unified group of things or people that can

be seen as a unit. For instance, when we say 'the West is rich', the subject of this proposition is not a specific individual. Rather the subject is a unified group that can be considered a unit. Or when we say 'Nature has order' the subject is not a specific individual. It's a unified entity and consequently this proposition is a singular proposition.

Al-Ghazzālī (450/1058-505-1111) uses the term *al-qaḍīyah al-shakhṣīyah*' in both *Maqāṣid al-Falāsifah* and *Miʿyār al- 'Ilm fī Fan al-Manṭiq* but he coins a new term, *al-qaḍīyah al-mutaʿayinah*' in *al-Mustaṣfā fī 'Ilm al-'Usūl* and *Miḥak al-Naẓar.* [19] Suhrawardī (550-1154-587/1191) uses '*al-qaḍīyah al-shakhṣīyah*' and '*al-qaḍīyah al-makhsūṣah*' in *Manṭiq al-Talwīḥāt* [20] but in *Ḥikmat al-Ishrāq*, he gives a new definition of singular proposition by replacing the two terms mentioned in *Manṭiq al-Talwīḥāt*with another one: 'a proposition the subject of which is *shākhiṣ* (an individual) is called *shākhiṣah.*'[21] As we see, Suhrawardī changes the term 'particular' used by previous logicians to '*shākhiṣ*'. This change of term is not a whimsical, purposeless attempt on the part of logicians. Rather, it reveals logicians' awareness of the problems that they faced while defining the subject term of singular propositions; the problems to which I will attend presently.

Singular proposition

As I said, the use of different terms for the subject of singular propositions is notable. Al-Fārābī used 'individual' or 'concrete things' while Avicenna preferred the three terms 'particular thing,' 'particular term,' and 'particular.' For Bahmanyār, the subject was an 'individual' and Suhrawardī employed the term '*shākhiṣ*'. The shortcoming of al-Fārābī definition is that it's not comprehensive; that is to say, in addition to individuals and concrete things, the subject of singular propositions can contain abstract things and something which is not a concrete object (i.e. a word). Avicenna's definition is not exhaustive, either. If we assume that the subject of a singular proposition should be a 'particular term', we'll have difficulty analyzing some propositions which have 'general terms' (*al-lafẓ al-kullī*) as their subjects while they should be considered singular propositions. A good example is the proposition 'Human is English' by which we mean "The word 'human' is an English word." Thus, this is a singular proposition.

Therefore, it's more accurate to say that a singular proposition is a proposition the subject of which is a particular entity (*al-'amr al-khāṣ*) whether it be a particular individual, a particular object, a particular abstract thing, or a particular term.[22] Thus when we say, '*Verb* is not a verb', the word 'verb' in the proposition does not designate words such as eat, drive, etc. Rather, it means that the word 'verb' is an English vocabulary which functions as a noun instead of verb. Or when we say, 'Cat has three letters', it doesn't mean that 'whatever is a cat, has three letters'. The word 'cat' does not refer to an animal, here. The meaning of this sentence is that 'cat' is a three-letter word. Therefore, this proposition meets the requirements of singular propositions although, at first glance, the term, 'cat,' which is the subject of this proposition may seem to be general, and consequently insufficient to be called a singular proposition. More attention to the subject reveals that 'cat' is a particular term consisting of the three letters c, a, and t.

Thus, if we define a singular proposition as a proposition whose subject is a particular entity (whether it be a particular individual, object, abstract thing, or term) the following statements are examples of singular proposition.

1. This cat has four legs.
2. 'Cat' has three letters.
3. Cat is a species.

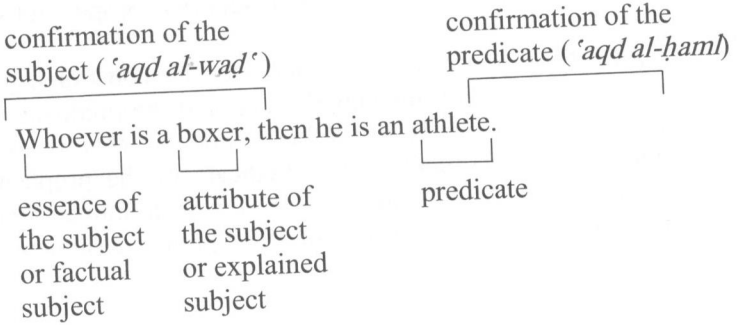
Features of singular proposition

Islamic logicians have discussed the requirements that should be met so that a proposition can be classified as a singular proposition. In what follows, I will introduce specific features of singular propositions which make them distinct from other types of categorical propositions.

1. Singular proposition is characterized by constituency relation. The relation between the subject term and the predicate term in a singular proposition is that of constituency; that is to say, the subject is a constituent of the predicate of the proposition. For example, in the proposition 'Socrates is a human being', the subject (Socrates) is a constituent of the predicate (human being).

2. Singular propositions are indivisible. Having defined singular proposition as a proposition the subject of which is a particular entity, some logicians talk of indivisibility of singular propositions into the confirmation of the subject (*'aqd al-waḍ'*) and the object (*'aqd al-ḥaml*). Afḍal al-Dīn al-Khūnajī (590/1194-646/1248) was the first logician to notice this feature. He believed that the factual subject (*al-mauḍū' al-haqīqī*) and explained subject (*al-mauḍū' al-dhikrī*) [23] are distinct in universal propositions while they are the same in singular propositions.[24] Al-Kolonbawī (b. 1205/1791) claims that the subject of a proposition is either factual or explained. Factual subject refers to the set of members that exemplify the concept of the subject of a proposition. [25] Explained subject designates attributes and properties expressed in the proposition which describe members of the subject term. [26]

The subject term of categorical propositions contains objects, not concepts nor attributes. In the proposition 'S is P,' the subject is not the concept of S. Rather, the subject term consists of members to which the attribute of 'being S' applies. What is meant by 'Boxers are athletes' is that 'those who are boxers are athletes'. This proposition asserts that the two attributes of 'being boxer' and 'being athlete' share common members. Those common members are the factual subject to which the general concept of 'being boxer' is ascribed. 'Boxers' is called 'explained subject' because it explains the properties or the general concept which are ascribed to its members (i.e. factual subject). Confirmation of the subject (*aqd al-waḍ'*) designates members of the subject class and the properties assigned to them. Predicate is also a general concept whose members are common to the subject term. Thus, the general concept of predicate in conjunction with its members are called 'confirmation of the predicate (*'aqd al-ḥaml*).' The following graph explains the proposition A: All boxers are athletes.'



As we see, the factual subject which is shown in the analysis of the proposition with the word 'whoever' is not mentioned in the categorical proposition A and the concept of 'being boxer' has been used in its place. Therefore, it is called 'explained subject.' This analysis of a proposition by Muslim logicians is similar to the following analysis of universal statements by modern logicians where x, F, G, Fx, and Gx respectively stand for factual subject, explained subject, predicate, confirmation of the subject, and confirmation of the object:

$$(x)Fx \rightarrow Gx.$$

Singular propositions, however, cannot be divided into the confirmation of the subject and confirmation of the object because factual and explained subjects are the same in singular propositions. In a singular proposition, the subject is a particular individual or object rather than instances of a particular attribute. Thus, we do not need to have the confirmation of the subject because the members of the subject are already clearly known to us. Indivisibility of singular propositions is one of the distinguishing features that differentiates it from determinate propositions. As a result, singular proposition is referred to as 'atomic sentence' in modern logic.

3. Unquantifiability. Singular propositions are not quantifiable. Quantity of a proposition is a matter of concern when, in Suhrawardī's words, the subject of a proposition is inclusive rather than *shākhiṣ* (an individual).[27] To put it another way, a quantifier is needed when the subject variable of the proposition is indeterminate. If the subject variable is without any quantifier, the proposition is open. By adding a quantifier to the subject variable, the variable becomes limited and the proposition turns into a meaningful closed one, the truth or falsity of which can be affirmed or denied. Adding a quantifier to a singular proposition whose subject term consists only of one thing or individual makes it meaningless. The main reason behind unquantifiability of a singular proposition is its indivisibility into the confirmation of the subject (*aqd al-waḍ*) and the object (*aqd al-ḥaml*). Quantifiability of a proposition presupposes its divisibility into the confirmation of the subject and the object and propositions that do not satisfy this condition cannot be considered quantifiable.

4. Singular propositions do not fit in the division factual proposition (*al-qaḍīyah al-haqīqīyah*) vs. extrinsic proposition (*al-qaḍīyah al-khārijīyah*). Logicians of the Islamic period categorized propositions in different ways one of which is the division of propositions into two groups: factual and extrinsic propositions.[28] There is a necessary relation between confirmation of the subject and confirmation of the predicate in factual propositions while this relation is logically contingent in extrinsic propositions. Factual-extrinsic dichotomy roughly corresponds to analytic-synthetic dichotomy in Western logic. Similar to an analytic proposition, predicate concept of a factual proposition is contained in its subject concept. In extrinsic propositions, similar to synthetic propositions, the subject does not contain the predicate in its meaning. The proposition 'The sum of the angles in a triangle is 180 degrees' is a factual proposition because the sum of the angles in any triangle is necessarily and always 180 degrees while the proposition 'All Iranians are friendly' is an extrinsic proposition because Iranian people are not necessarily friendly. Rather, the relation between confirmation of the subject and confirmation of the predicate in this case is not necessarily true: some Iranians are friendly while some aren't. The proposition 'All male parents are fathers' has the two attributes of 'being male' and 'being father' and there's a necessary relation between the two attributes; i.e. you cannot find a male parent who is not a father. The proposition 'All students are hardworking' has two attributes of 'being student' and 'being hardworking' but the relation between the confirmation of the two attributes is not necessary, i.e. you can find people who are students but are not hardworking. The former is a factual proposition and the latter an extrinsic one. What distinguishes an extrinsic proposition from a factual one is the relation between the confirmation of subject and the confirmation of the subject: if the relation between the two is logically necessary, it's a factual proposition; otherwise, it's an extrinsic proposition. Due to their indivisibility into the confirmation of the subject and the object, singular propositions cannot be classified as factual or extrinsic propositions. For this reason, many Muslim logicians including Najm al-Dīn al-Kātibī (617/1220-675/1276) and Sirāj al-Dīn al-Urmawī (594/1198-672/1274) discussed factual/extrinsic propositions under the heading 'Analysis and Division of

Determinate Propositions' and didn't mention singular propositions at all. [29]

5. Singular propositions do not paly deductive roles in categorical syllogism. Syllogisms are of two types: exceptive syllogism (*al-qiyās al-istithnā'ī*) and categorical syllogism (*al-qiyās al-iqtirānī*). Exceptive syllogism is a syllogism whose premises actually contain either the conclusion or its contradictory. Every exceptive syllogism has two premises: the first is a conditional proposition (conjunctive or disjunctive) and the second is a categorical proposition which is either the antecedent or consequent of the conditional proposition or the contradictory thereof. For instance,

Syllogism 1:
If we heat this metal, it will melt,
we heated this metal,
therefore, this metal melt.
Syllogism 2:
If it's raining, the sky is cloudy,
but the sky is not cloudy,
therefore, it's not raining.
Syllogism 3:
4 is either odd or even,
4 is not odd,
Therefore, 4 is odd.
Premises of the abovementioned syllogisms actually contain either the conclusion or its contradictory. 'This metal melt' which is the conclusion of the syllogism is actually stated in the first premise of Syllogism 1. In Syllogism 2, the contradictory of the conclusion which is 'it's raining' is actually stated in the first premise. Syllogism 3, also, contains the conclusion in its premise.
Categorical syllogism is a syllogism whose premises do not (actually) contain the conclusion. Rather, the conclusion of this type of syllogism is formed by combining the two premises. For instance,
Syllogism 4:
Snakes are reptiles,
reptiles are animals,
therefore, snakes are animals.

In this syllogism, 'snakes are animals' which is the conclusion of the syllogism does not occur actually in either of the premises. Instead, the premises respectively indicate that 'snakes are reptiles' and 'reptiles are animals.' We could draw the conclusion by analyzing these two propositions and mixing them. We took three steps in this case:

1. Dividing 'snakes are reptiles' into two terms: 'snakes' and 'reptiles.'
2. Dividing 'reptiles are animals' into two terms: 'reptiles' and "animals."
3. Mixing 'snakes' and 'animals' as 'snakes are animals.'

Thus, the conclusion in Syllogism 4 is obtained by means of determining and combining major and minor terms of the premises. What we mean by terms (*ḥadd*) in propositions is subject and predicate. When premises of a categorical proposition are analyzed, we find four terms, two of which are appear twice and are referred to as 'middle term' (*al-ḥadd al-awṣaṭ*). The other two terms are 'minor term' (*al-ḥadd al-aṣghar*) which occurs as subject in conclusion and 'major term' (*al-ḥadd al-akbar*) which occurs as predicate in conclusion. The middle term is common to the two premises and serves as a uniting link between them. It is absent from the conclusion. In Syllogism 4, 'snakes,' 'animals,' and 'reptiles' are respectively minor, major and middle terms.

Earlier in this article it was mentioned that Aristotle overlooked singular propositions in his study of different types of propositions. The reason behind the absence of singular proposition in Aristotle's discussion, in Yahya ibn ʿAdiy's opinion, is that it can neither be used as the major nor minor premises of syllogism. Indivisibility of the singular proposition into confirmation of the subject and confirmation of the object has made it useless for categorical syllogism. Categorical syllogisms are formed by means of dividing premises into terms and then combing the terms for yielding conclusion. Thus it's necessary to determine the two terms of each premise (i.e. the confirmation of the subject and the object) first so that that resulting terms can be combined in the conclusion. But a singular proposition cannot be divided into the confirmation of the subject and the object, as a result, it cannot be used in categorical syllogisms.

6. Singular proposition is not convertible. If the terms in the proposition are switched and the proposition remains true, the new

proposition is called the converse of the original one. For instance, 'Every even number can be divided by two' is the converse of 'Every number that can be divided by two is even'. Logicians of the Islamic period maintain that the subject term of singular propositions is particular and that no particulars can used as the subject term. One of the main differences between the subject and the predicate is that the former can be particular while the latter is always universal. No particulars can ever be used as the predicate because they cannot hold true for many things. Predication implies inclusion. If P predicates of S, it means that S is distributed to P. Thus it follows that S is capable of distributing to other things which is itself a characteristic of universals. Thus, the converse of the singular proposition 'S is P' is 'P is S' but because S is particular rather than universal, 'P is S' does not hold true. So, it can be said that singular propositions are not convertible.

Kāshif al-Ghiṭā', among Muslim logicians, believes that a singular proposition can be convertible with a particular proposition (*al-qaḍīyah al-juz'īyah*).[30] His idea, however, hold only true for identity relations, not for constituency nor subsumption relations.

To clarify this point, when we say that 'S is P', we should note that there are three relations implicit in this proposition: 1. Identity relation of S and P. 2. Constituency relation of S and P meaning S is a constituent member of the predicate term P. 3. Subsumption relation of S in the class of P. By subsumption relation it is meant that the members of the subject class are subsumed in the predicate. For instance, in the proposition 'All Africans have black skins' the subject class (African people) is subsumed in the predicate (people with black skins). Aristotelian logic, especially his connective logic, is based on the third relation. The first, second and third relations belong respectively to tautological, singular and determinate propositions. According to the ideas of the logicians of the Islamic period, which are based on Aristotelian logic, connective syllogism consists of determinate propositions which manifest subsumption relations. Thus, in the logic of the Islamic period, only propositions that are characterized by the third relation (i.e. subsumption relation) are discussed and accepted, a prerequisite which is not achieved unless the predicate is universal.

Aristotelian logic is basically the logic of determinate propositions; therefore, there is no clear examination of propositions featuring identity

relations. From the identity relation of the proposition 'Socrates is a human' we can deduct truly that 'some humans are Socrates'. That is to say, from **Fa** we conclude that $(\exists x)(Fx \ \& \ x = a)$. This deduction, however, is not possible in Aristotelian logic because identity relation has no place in this logic.

7. Singular propositions have no value in science. The fact that singular propositions are not useful in science is one of the issues with consensus among Muslim logicians so that the claim 'only determinate propositions have value in science' has turned into one of their basic logical principles. They all agree about the futility of singular propositions in science but they differ in their reasons as to why this is the case. Here, some of the logicians' reasons are listed:

   a) Particular things are transient, instable, and not durable.
   b) Particular things are finite and unquantifiable.[31]
   c) Singular propositions cannot be used as premises of syllogism.[32]
   d) Singular propositions cannot be used as the premise of argument (*burhān*).[33]
   e) Particular things are not worthy of proof.[34]
   f) Perfection never emanates from particular things for human beings.[35]

One question requires investigation here: Is the claim whereby singular propositions have no value in science a descriptive rule or a normative one? In other words, is this rule, a principle of posterior scientology? That is to say, in order to describe the laws governing science, logicians, after conducting experimental studies of sciences, concluded that singular propositions are not helpful in science. Or is this rule a principle of prior scientology which logicians advise researchers to implement? That is to say, structural logic of sciences demands scientists not to incorporate singular propositions in their scientific inquiries. This recommendation is not a value judgment. Rather, it's a methodological suggestion. The significance of such distinctions is revealed in how they are criticized. If this rule is taken as a description of the logical structure of sciences, one could raise doubts concerning the truth of this claim in sciences other than philosophy or logic. The assertion regarding futility of singular propositions is not tenable in sciences such as history, geography, geology,

etc. Such sciences are very dependent on observation of particular things. Therefore, this rule cannot be considered a descriptive one. Indeed, logicians of the Islamic period set forth this assertion as a normative rule. They didn't give scientists permission to use singular propositions. This injunction, however, concerns only sciences that are dependent on demonstrative proof (*al-ʿulūm al-burhānīyah*).

Traditional logicians divided the sciences of their time into two groups: sciences that are dependent on demonstrative proof (*al-ʿulūm al-burhānīyah*) and sciences that do not use demonstrative proof (*al-ʿulūm ghair al-burhānīyah*). The former relies on logical criteria and uses argumentation and demonstrative proof as method of deduction while the latter has no logical structures and consequently does not depend on logical criteria of knowledge. Logicians thought that logical method of sciences is exclusively limited to demonstrative proof. As a result, they mainly focused on *al-ʿulūm al-burhānīyah* including all branches of early *philosophia prima*, mathematics, physics, and practical philosophy. Thus, the principle according to which 'singular propositions have no value in sciences' is a logical principle in prior scientology of the logicians of the Islamic period which applies solely to *al-ʿulūm al-burhānīyah*. Although determining the scope of *al-ʿulūm al-burhānīyah* is not easy at all, we can accept this conditional proposition: 'if a science uses demonstrative proofs, singular propositions have no value in it'. Demonstrative proof (*al-burhān*) is a syllogism whose foundation rests on premises that are certain and fixed. The main feature of demonstrative proof is the unchanging certainty that it yields. In contrast, particular and personal entities do not produce permanent knowledge because they are always changing. Consequently, particular and personal entities can play no roles in demonstrative proof. [36]

8. Only contradictory relation does hold for singular propositions[37]. Two propositions which have the same subject and predicate but differ in quality and quantity are related in one of these four ways in Aristotelian logic: contradictory, contrary, subcontrary, and subaltern. 1, 2, and 3, stand respectively in the contradictory, contrary, and subalternation relations with the proposition 'Every S is P'.

a) Some S are not P.
b) No S are P.
c) Some S are P.

d) Subcontrary refers to the relation between two propositions with similar subject and predicate which differ in quality. The two following propositions are subcontraries.
e) Some S are P.
f) Some S are not P.

If a proposition holds, it can be said without recourse to syllogism, that its corresponding subaltern is true. It could be also claimed that the contradictory and contrary of that proposition are false. The difference between contradictories and contraries is that two contraries cannot be simultaneously true but they can be simultaneously false while two contradictories can neither be simultaneously true nor simultaneously false. Contrary, subcontrary, and subaltern relations are strictly limited to determinate propositions. In order to have contrary, subcontrary, and subaltern relations of a proposition, the proposition should be quantifiable. Since singular proposition is not quantifiable, its contrary and subaltern do not hold. However, we can get the contradictory relation of any proposition (whether it's singular or not) by simply negating it. If one of the two contradictory propositions is false, the other one is true and if one of the two contradictory propositions is true, the other one is false. As a result, the proposition that is in contradictory relation to the proposition 'Shakespeare was a dramatist' is 'Shakespeare was not a dramatist'. Because the singular proposition 'Shakespeare was a dramatist' is true, its contradictory is false. Thus, it could be said that the only relation that holds for singular propositions is contradictory relation.[38]

Conclusion

Naming and defining singular proposition has its own historywith many ups and downs. *Al-qaḍīyah al-shakhṣīyah*, *al-qaḍīyyah al-makhṣūṣah*, *al-qaḍīyah al-mutaʿayinah*, and *al-shākhiṣah* are the terms which Islamic logicians used in order to refer to singular propositions. There was a sundry of ideas regarding the subject of singular propositions. Avicenna, for instance, expressed in different texts that the subject should be a particular thing, a particular term, or particular. The use of different terms by Muslim logicians was intentional. It reveals logicians' attention to the problem that may arise if the subject is considered solely a particular individual or a particular term. Therefore, it's more accurate to say that a singular proposition is a proposition the subject of which is a particular entity

whether it be a particular individual, object, term ora particular abstract thing.The common thread running through all features of singular proposition, which plays a key role in analyzing this type of proposition in the history of the Islamic logic from al-Farābi to al-Kolonbawi, is the indivisibility of singular proposition into confirmation of subject and confirmation of the object. All features of this proposition are derived from this characteristic of singular proposition. Singular propositions have the features listed below.

1. Singular proposition is characterized by constituency relation.
2. Singular propositions are indivisible.
3. Singular propositions are not quantifiable.
4. Singular propositions do not fit in the factual/extrinsic proposition dichotomy.
5. Singular propositions do not paly inductive roles in categorical syllogism.
6. Singular proposition is not convertible.
7. Singular propositions have no value in science.
8. Only contradictory relation does hold for singular propositions.

Notes & References

[3] Nicholas Resher uses the expression 'Arabic logic' while Tony Street employs 'Islamic logic' in addition to 'Arabic logic' (Nicolas Resher, *The Development of Arabic Logic*, (Pittsburgh: University of Pittsburgh Press, 1964); Tony Street, "Arabic andIslamic Philosophy of Language and Logic," in *Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, (Stanford: Stanford University, 2013), pp. 1-44). In my opinion, the term Islamic logic is more appropriate and inclusive because it covers Iranian logicians such as al-Fārābī, al-Ghazzālī, and Mulla Sadrā who employed Arabic languagein their logical writings.

[4] Aristotle, *Categories and De Interpretation*, 20a, p. 23-20, b13.

[5] Aristotle, *Prior Analytics* in *Categories and De Interpretation,* trans. J. L. Ackrill, 24 (Oxford University Press, 1990), 24a 16-21.

[6] al-Fārābī, *Kitāb al-Qīyās* in *al-Manṭiqīyāt*, ed. Muḥammad Taqī Dānish Pajouh, (Qom: Maktabiy-i Ayatollāh Mar ashī Najafī, 1409), vol. 1, p. 118, 156.

[7] Arabic translation of *De Interpretatation*, in *Manṭiq Arasṭū*, ed. Abdul Raḥmān Badawī, (Beirut: Dār al-Qalam, 1990), second footnote.

[8] al-Fārābī, *al-Manṭiqīyāt*, vol. 1, p. 118.

[9] al-Fārābī, *al-Manṭiqīyāt*, vol. 1, p. 156.

[10] Avicenna, *al-Ishārāt wa al-Tanbihāt*, ed. Suleiman Dunyā, (Cairo, 1947), p. 17; Avicenna, *Kitāb al-Najāt*, ed. Muḥammad Taqī Dānish Pajouh, (Tehran: Tehran University, 1364 AH), p. 21.

[11] al-Lawkarī, *Bayān al-Ḥaqq*, ed. Ebrāhīm Dībājī, (Tehran: AmīrKabīr Publisher, 1364 AH Solar), p. 149.

[12] Avicenna, *'Uyūn al-Ḥikmah*, ed. Muḥammad 'Abdeh, (Cairo: al-Torath al-'Arabī, 1945), p. 18; Avicenna,*Dānishnāmā-i 'Alaī*, ed. Muḥammad Mu'īn and Sayyed Muḥammad Meshkāt, (Tehran: Dihkhudā, 1353 AH Solar), p. 38.

[13] Avicenna, *Kitāb al-Shifā'*, ed. Ebrahim Madhkūr, (Cairo: Dār al-Kitāb al-'Arabī li Ṭaba'a wa al- Nashr, 1964), vol. 3, p. 134.

[14] 'Umar Ibn Sahlān al-Sāwī, *al-Baṣā'ir al-Naṣīrīyah*, ed. Muḥammad 'Abdeh, (Egypt: Intishārāt al-Kubrā al- Amīrīya, 1316 AH), p. 50; 'Umar Ibn Sahlān al-Sāwī, *Tabṣarah*, ed. Muḥammad Taqī Dānish Pajouh, (Tehran: Tehran University Publication, 1337 AH Solar), p. 30.

[15] Bahmanyār, *Kitāb al-Taḥṣīl*, ed. Mortezā Muṭahharī, (Tehran: Tehran University, 1349 AH Solar), p. 49.

[16] Ibn Ḥazm, *Kitāb al-Taqrīb*, ed. Eḥsān Abbāsī, (Beirut: Dār Maktabah al-Ḥayāṭ, 1959), vol. 4, p. 221)

[17] Ibn Ḥazm, *Kitāb al-Taqrīb*, p. 153.

[18] Abu'al-Barakat al-Baghdādī, *Kitāb al-Mu tabar*, ed. Suleimān al-Nadwī, (Heidar Abad: 'Idārāh Jam īyah al-Ma ārif al-Uthmānī, 1357 AH), vol. 1, p. 75.

[19] al-Ghazzālī, *Maqāṣid al-Falasifah*, ed. Suleiman Dunyā, (Egypt: Dār al-Ma ārif, 1961), p. 58; al-Ghazzālī, *Mi yār al- Ilm fī Fan al-Manṭiq*, ed. Suleiman Dunyā, (Egypt: Dār al-Ma ārif, 1961), p. 86; al-Ghazzālī,*al-Mustaṣfā fī 'Ilm al-'Usūl*, (Lebanon: Dār al-Ma rifah, 1323 AH), vol. 1, p. 36; al-Ghazzālī, *Miḥak al-Naẓar*, ed. Rafīq al-'Ajam, (Cairo: al-Maṭbi'ah al-Adabīyah), p.24.

[20] Shahāb al-Dīn Suhrawardī, *Manṭiq al-Talwīḥāt*, ed. Alī-Akbar Fayyāḍ, (Tehran: Tehran University Publication, 1955), p. 20.

[21] Shahāb al-Dīn Suhrawardī, *Ḥikmat al-Ishrāq*, ed. Henry Corbin, (Tehran: Institution of Philosophy, 1977), vol. 2, p. 20.

[22] Aḥad Farāmarz Qarāmalekī, *Taḥlīl-i Qaḍāyā*, (Tehran: Tehran University Publication, 1373 AH Solar), p. 267.

[23] Afḍal al-Dīn al-Khūnajī, *Kashf al-Asrār an Ghawāmid al-Afkār*, ed. Khālid al-Ruyhab, (Tehran: Institute For Research in Philosophy, 1389 AH Solar), p. 89.

[24] The two terms, factual subject (*al-mauḍū al-haqīqī*) and explained subject (*al-mauḍū al-dhikrī*), are not used in al-Khūnajī's text. The two terms are coined by Al-Kolonbawī.

[25] al-Kolonbawī, *al-Burhān*, ed. Farajallāh Zakī al- Kurdī, (Egypt: Maṭba at al-Sa ādat, 1347 AH), p. 150.

[26] al-Kolonbawī, *al-Burhān*, p. 150.

[27] Shahāb al-Dīn Suhrawardī, *Manṭiq al-Talwīḥāt*, p. 20.

[28] Afḍal al-Dīn al-Khūnajī, *Kashf al-Asrār*, p. 84.

[29] Najm al-Dīnal-Qazwīnī al-Kātibī, *Jamī al-Daqā'iqfī Kashf al-Haqā'iq*, (microfilm collection of Tehran University), p. 515; Najm al-Dīnal-Qazwīnī al-Kātibī, *al-Risālah al-Shamsīyah*, (Beirut: Shirkah Shams al- Shurūgh), p. 294; Siraj al-Din al-Urmawi, *Bayan al-Ḥaqq wa Lisan al-Sidq*, (microfilm of Kitabkhaney-e Malik), p. 72; Sirāj al-Dīn al-'Urmawī, *Maṭāli al-Anwār*, in Commentary on *Maṭāli*, (Qom: Intishārāt-i Kitāb- i Najafī), p. 130.

[30] Kāshif al-Ghiṭā', *Naqd al-'Ārā al-Manṭiqīyah*, (Najaf: Maṭba a Na mān, 1382 AH), p. 473.

[31] Kāshif al-Ghiṭā', *Naqd al-'Ārā al-Manṭiqīyah*, p. 383; Ghulāmḥussein Ebrāhīmī Dīnānī, *Qawā'id Kullī Falsafī dar Falsafiy-iIslāmī*, (Tehran: Mu'assassah–yi Muṭāli āt wa Taḥqīqāt-i Farhangī, 1368 AH Solar), vol. 3, p. 200.

[32] Yahya ibn Adī, commentary on *Aristotle's Kitāb al-Qīyās*. See Abdul Raḥmān Badawī, vol. 1, p. 139.

[33] Ibn Ḥazm, *Kitāb al-Taqrīb*, vol. 4, p. 193.

[34] Avicenna, *Kitāb al-Najāt*, p. 143.

[35] Mullā-hādī-Sabziwārī, *Sharḥ al-Manẓūmah al-Juz al-Awwal Qism al-Manṭiq al- Musammā, "La'ālī al-Muntaẓama,"* ed. Ḥassan Ḥasanzādih 'Amulī, (Tehran: Nashr-e Nab, 1369 AH Solar), p. 43.

[36] Avicenna, *Kitāb al-Najāt*, p. 143.

[37] Islamic logicians considered the square of opposition as one of the principles of propositions. Nowadays, however, it is thought of as a deductive criteria. Consequently, it is included under direct deduction (al-Muẓaffar, *al-Manṭiq*, (Qom: Ismā'īlī Publication, 1383 AH Solar), p. 155; Aḥad Farāmarz Qarāmalekī, *Taḥlīl-i Qaḍāyā*, vol. 1, p. 166).

[38] Aḥad Farāmarz Qarāmalekī, *Taḥlīl-i Qaḍāyā*, p. 278.