Probability, Probability and Plausibility: Understanding Concepts in the Philosophy of Aristotle Farabi, Averroes and Avicenna

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Abstract

The aim of this study, based on the concepts of Aristotle, Al Farabi, Ibn Sinai and Ibn Rushdi, is to target both the tradition of Islamic philosophy and the history of ideas about mathematics and metaphysics, with the insights of all three philosophers. However, logic is to contribute to these problems in the modern definition of logical problems and solutions within the framework of the Islamic philosophy. Significantly, the classical logic indicated that probability calculation existed, and mentioned the distinction between Aristotle and Avicenna in their approach to the concept of possibility. The purpose of this paper is to examine what terms and concepts these words are, and to frame for a more detailed review of the history of ideas, the causation of the phenomenon, and the context of the medieval era. Rather than considering a large part of the relationship between logic and metaphysics, one could argue that examining these concepts in an environment in which they are closely related would create a remarkable weight on one side. When exploring the metaphysical understanding of philosophers, these concepts were not presented in the study of logic, especially their definition and classification. The main purpose of this study is to point out that there is a possibility and probability in the part of the efforts of Islamic philosophers to understand metaphysical ideas and to demonstrate the meaning and use of this concept.

Keywords: *Possibility, probability, plausibility, logic, mathematics.*

Introduction

The structure of such propositions, the contradiction, opposition and rotation relations with each other, as well as the nature of the result to be obtained from the syllogism in case they exist as an element in different forms of syllogism, constitute the main focal points of this subject. On the other hand, many important information about necessary, possible and impossible definitions and their sub-branches, are discussed within the framework of modal propositions and modal comparison analyses. In this context, it would be appropriate to point out a long-term discussion about propositions with the possibility modal to show the scope of the concept. The issue of "possible future contingents" brought up for the first time by Aristotle, especially in the context of bivalent-multi-valued logic discussions, the dilemma of free will-determinism and God's knowledge of such propositions, was used in both Hellenistic philosophy schools and medieval scholastic schools. It is possible to find the reflection of this problem in the Islamic world, especially in the commentary written by Fârâbî to Aristotle's work titled

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On the Interpretation (Peri Hermeneias / De Interpretatione / el-İbâre), in which Aristotle brought up the issue. From the first half of the XX century, intense debate around the modes of necessity, possibility, and impossibility led to the logic of modes, the emergence of a particular subbranch called modal logic, and a rich literature emerged in the West, particularly within the framework of this more formalized discipline.

It should also be noted that the notion of possibility and probability is a metaphysical concept, as well as important logical considerations. In the metaphysical context, the possibility and probability, rather than being the qualifier of a direct premise, such as the logic, acquire an ontological reality and is used to express a specific area and type of entity. The understanding of the realm, whose traces extend to Aristotle, but are systematically altered by all the scope and subtleties of the philosophical tradition in the Muslim world, is also the starting point for studying the nature of the idea of possibility. In this framework, besides the definition and classification of the possibility and probability, a fundamental question arises as to how this classification can be applied to the realm as a whole, to the beings that make up the superlunar and sublunar realms.

The content of this study, which aims to reveal the position of the concept of possibility in the tradition of Islamic philosophy, in which meanings and functions it is used, is limited in three aspects: one is the time period, the other the philosopher focused on, and the last one is the size of the subject. The main area of interest of the study is the classical period of Islamic philosophy, IX.-XII. for centuries. In the face of the difficulty of examining the views of all Islamic philosophers, who lived in this long period of time, on the concept of possibility and probability, in the same scope and depth, the philosophy of Avicenna was chosen as the field to focus on.

Avicenna's interpretation of previous knowledge of Islamic philosophy and his relationship with the science of logic (kalam), whose nature is still ambiguous, and his profound influence on the developments in philosophy and even theology after him played a significant role in this choice. The third limiting element on the subject is as a metaphysical concept. It is the record of possibility, and this record does not aim to exclude the logical dimension of the concept of possibility and probability, but only to limit it. This limitation makes it possible to exclude the structure of modal propositions and the relations between them, as well as the theories of comparisons consisting of such propositions from the scope of the research.

Method

The claim of this study is not only about determining the position of the concept of possibility in the tradition of Islamic philosophy in the framework outlined above, but also directly related to the research methods followed. The claim of this study is not only about determining the place of the concept of probability in the tradition of Islamic philosophy, but also directly related to the research methods followed. This study, which examines the history of the concept of possibility, centered on Ibn Sînâ, consists of three parts. In the first two chapters, the concept of possibility is discussed in terms of Ancient-Hellenistic and pre-Avicenna philosophy and theological traditions, in the third chapter, the place of possibility in Avicenna's philosophical system is examined in detail.

When the works of Aristotle translated into Arabic thanks to the translation movement in the classical period are compared with the modern publications and translations made on the basis of Greek today, it has been evaluated that the translations in the classical period were extremely successful. In order to determine the concepts used by Aristotle in Arabic and to determine the evaluations of Islamic philosophers on these concepts, it was deemed necessary to base the classical period Arabic translations together with modern publications and translations. Thus, the continuity and differences between the original Aristotle and the Aristotle reflected by the translations will be revealed. According to the

studies on the metaphysics of Al-Fârâbî and Avicenna, and the explanations pointing to the necessary and possible distinction made by these two philosophers about existence; however, it is possible to come across the metaphysical dimension of the concept of possibility, which has been largely neglected in the face of the interest shown in the concept of necessity, in Hüseyin Atay's work titled Creation in Fârâbî ve İbn Sînâ.

This study, which Atay prepared as an associate professorship thesis in 1968, is the first work that draws attention to the metaphysical dimension of the concept of possibility in a relatively comprehensive way. Atay, who started the special chapter on this concept (30-46) by revealing the lexical meaning of the concept, then examines the meaning and classification of this term in terms of Fârâbî and Avicenna, as well as the possibility-power relationship, the quality of possibility of the world as a whole, and the content of the concept of possibility in the context of the eternity of the world. (Atay, 2001; pp. 133-165) The concept of probability of the literature and its evaluation so far in order to determine the place of this study in the literature, it is imperative that the studies on the expansion of this concept should be revealed. For this purpose, in the literature assessment, the main studies on the subject in Turkish and English are discussed within the framework of remarkable dominant characteristics.

Research Results

Scope and frame of the subject "Probability, probability and plausibility"

The concept of dynamis in ancient Greek means power, ability to do anything, potential, square and possibility. (Liddell&Scott, 1996: p, 452). Plato was the first to include the concept of dynamis in philosophy by placing it in an ontological context. In order to see the main purpose of his use of this concept and the break that the concept created in the history of philosophy, it is necessary to open the word by starting from the first breaking moments both created by philosophy and created in philosophy, before the concept of 'dynamis'. In the light of Hesiod's line "The First was Chaos," (2006: T116) we can enunciate that mythology begins with chaos, with eternal darkness, a kind of immersion that shows the absolute poverty of darkness. The concept of chaos in ancient Greek means chaos, endless darkness, unformed matter (Liddell & Scott, 1996: p, 1976) Hesiod continued this line, in which he put chaos at the beginning of mythology, with the narrative describing how the Earth and Eros, Erebos and Night, Sky and Day, Ocean and Chronos, and other natural sensory and intellectual elements were formed, respectively. (2006: T117-136). With this in reason, mythology is the first attempt to reveal the cosmos, a kind of order against the initial chaos. The concept of cosmos in ancient Greek means order, harmony, orderliness, universe and ornament (Liddell & Scott, 1996: 985). It is certainly not a coincidence that the cosmos, which Hesiod determines as an attempt to illuminate the darkness against the endless darkness he mentions chaos, consists of natural elements. The fact that the term physis, which means origin and nature in a way, also means "visible/external form," indicates that the order that is tried to be brought with mythology is an attempt to arrange these visible elements of nature. The concept of physis in ancient Greek means origin, nature, physics, the visible/external form, the regular order of the natural/visible (Liddell & Scott, 1996: p, 1964). Aristotle, who systematized and structured it on this basis after Plato and carried it to the ontological field, also included the meaning of "probability" in the field of ontology, which would bring the concept of dynamis to its absolute power. (2018a: 1019a 15 - 1020a 6).

As we can see in Physics, Aristotle always left it for last to face the difficulties posed by Zeno. In Aristotle's eyes, this act of postponing indicates that Zeno was a formidable opponent. Zeno has created paradoxes against thinkers who reject a view of Parmenides that excludes kinesis altogether. The common point of these paradoxes is to combine the thoughts of those who accept the existence of kinesis with the concept of "infinite," which the Ancient Greek thought cannot overcome, to reduce them to inconsistency and to force

those who support the opposing view within this inconsistency to accept that kinesis cannot exist. "the thinkers who assert the existence of the 'void' agree with all others in recognizing the reality of ' place,' for the ' void' is supposed to be ' place without anything in it." (Aristoteles, 1997a: 209a 25)

Aristotle also; Although he refuted a Parmenidean conception by saying that everything is One, and since "One" and "everything" is different from each other, they say that there is more than one thing from the very beginning; it was stuck in Zeno's paradoxes as a problem that this refutation could not overcome. (1997a: 185a 25) Although he refuted a Parmenidean insight, he was caught in Zeno's paradoxes as a problem that this refutation could not overcome. As long as Zeno's paradoxes are not resolved, refuting the concept of the 'One' would also mean accepting the existence of an 'infinite' or 'non-existent' that always exists in action. However, for Aristotle, an "infinite" or "non-existent" that exists in case of necessity is also never acceptable. (1997a: 206a 15). The need to attribute the meaning of possibility to the term Dynamis was in question for a thought that took the floor by wanting to put forward the new. After including the meaning of possibility in the concept of Dynamis, Aristotle can say that being can exist in three different states in the Theta of Metaphysics.

According to this distinction, beings exist as dynamis, as entelekheia or as energeia. (Aristoteles, 2018a: 1045b 27). The concept of entelekheia in ancient Greek means completion, realization and carrying its purpose within itself. Energeia means "activity" and "reality" in Aristotle's ontology. (Liddell & Scott, 1996: 575 ve Kuçuradi, 1981: 157). With the notion of possible existence, Aristotle is now able to discourse not only of the "infinite" but also of the "nonexistent" which was forbidden by Parmenides. (Aristoteles, 1997: 186a 15). There is no "non-existent" or "nothing" existing in the state of energeia, but with the addition of the concepts of kinesis and metabole, a "deprivation" that would later change the way it exists can now be called "possibly nonexistent". (Aristoteles, 1997: 186a 15). In Metaphysics, "Then it contains both not being something that could be and being something that could not be." (2018a: 1047a 21) It is precisely in this sense that Aristotle points to a dynamis state of deprivation that will undergo changes with kinesis and metabole.

Aristotle's concept of "existence as possible," which he included in the field of philosophy and the concepts of kinesis and metabole, opened a revolutionary line capable of responding even to the paradoxes of Zeno, the greatest aporias produced by Ancient Greek thought. It caused Aristotle to express what was new in the field of ontology. Aristotle considered the way of being in possibility as a style that is mostly determined according to the way of being in the state of energeia. In this way, it also leaves in the dark the issues such as whether there is an "opportunity in itself" that can be evaluated independently of energeia, and if there is, how to capture it.

According to Aristotle, energeia precedes possibility in terms of time, essence (ousia) and logos noun-word (logos). (Aristoteles, 2018a: 1049b 4-12). Aristotle considers the primacy in time as the primacy of possibility, of reality the same in form. According to him, the possible "seed" and "seeing" are temporally prior to the "wheat" and "seeing" existing as energeia, but there is also an energeia that always precedes them. (2018a: 1049b 22). It can be explained that what is in energeia always emerges from what is in dynamis and through what is in another state of energeia.

Understanding concepts in the philosophy of Aristotle Farabi, Averroes and Avicenna

This legacy of Aristotle came into question with the discovery of "existing in the way of possibility," which is one of the essential elements of both abstracting the previous systems and embodying his system. Probability, possibility and plausibility; are words we often use in our daily conversations, from time to time, without realizing it.

In order to know thinking briefly, we can define it as a set of operations performed by our consciousness. We will not discuss here what these processes of consciousness are. It is the subject of logic to examine all aspects of these processes that emerge in the process leading to knowing. This article aims to indicate where "opportunity" lies in this process. The knowledge that emerges from thinking is a concept or a judgment. The knowledge that emerges from thinking is a concept or a judgment. Regarding the possibility of thought, it is related to judgment, in other words, A Priori or propositions.

Possibility is used as the opposite of impossibility in everyday language and society. This meaning, which we can also call the dictionary meaning of possibility, has been considered more specific and defined as "It is possible or not impossible to think about whether it exists or not." Ibn Sina 1970: p, 116) This meaning, which we can also call the dictionary meaning of possibility, has been considered more specific and defined as "It is possible or not impossible to think about whether it exists or not." (Ibn Rushd 1982: p, 118) After this information we have given as the first explanation, what is possible in logic is that. We can say that the propositions are handled in the context of mode (direction). Therefore, probability is seen here as a feature related to judgment. Therefore, probability is seen here as a feature related to judgment. As it is known, the simplest judgment or proposition expressed as "A is B"; Subject -here A-, predicate-here B- and a link that connects the predicate to the subject, saying that the predicate -B is in the subject -B is in A -HERE-. (Al Farabi Logic 1986: p, 155) In this context, the mood of a proposition is the word that indicates the nature of the link that connects the predicate to the subject. Because the inherent quality of the connection in question it can be weak or strong. Such propositions are called modal propositions if a word is used to indicate an attribute. In this case, the suggestions are; just as it is divided into two quantifiable and indefinite in terms of quantity; In terms of modality, it is divided into two models, definite and indefinite. (Ibn Sina 2017: p, 43)

According to Avicena, we can determine the modalities of propositions by splitting the modality, starting from the concept of "possible." Accordingly, we can divide moods into possible (possible) and impossible. We can divide the impossible into two the impossibility of the predicate being in the subject or the loading of the predicate to the subject, and the possibility that the predicate is not in the subject or that the predicate is not loaded onto the subject. If we take the opposite of the possible, the impossible, in the sense of necessary, we can determine the modals by the same division method as follows: (1) the predicate must be in the subject or attributed to it; (2) must not be present or installed; (3) It does not need to be found or installed or not found or installed. (Ibn Sina 2017: p, 44)

In light of this information, given by Ibn Sina in more detail than Aristotle, Farabi, and Ibn Rushd, the modes are determined from the possible, and the possible encompasses all the modes. In a word, we can indicate how probability encompasses other modes: It is imperative that it can be attributed to every possible, obligatory and impossible subject. To put it more clearly, it is possible that the quality of the link that binds the predicate to the subject is one of these three features   possible, impossible, necessary. But this possibility is also necessary in the sense of the impossibility of the third case. In other words, it has to be one of these three possible states. Here is the possibility covering the three situations in question; It is the possibility that constitutes the essence and nature of logic and thought. In short, the content of logic is probability. The reverse is also true: probability is the essence of logic. (Farabi, 1964: p, 117)

As for the necessity of the possibility of one of the three states with respect to the modes, it is not a necessity of existence or content, but of the form of thought. In other words, Apparent; it is a formal necessity. However, the formal necessity; does not require the content to be mandatory. If formal necessity required content, then there would be no question of whether propositions are true. For then every proposition of ours would necessarily be true. In this respect, the logic; The fact that it deals with possibility, which

is a mode of judgment, is not directly related to what it is and its nature. On the contrary, it is concerned with the truth interpretation of the proposition whose tense is possible. (Ibn Sina Al shifa 2017: p, 74)

The possibility of logic content It makes it necessary to make a distinction between content, substance and form in propositions. However, while Aristotle does not use the terms "matter and form" in their logic texts, Farabi and Ibn Rushd use them temporarily and by analogy. That is, in a proposition, the subject and predicate clause of the proposition is "link" as its counterpart, while the same is true for the mode, which is a feature of the "connection". Accordingly, "link" is like the substance of the mode, and the mode (direction) is like the form of the link. However, Avicenna discusses the essence and form of both proposition and syllogism without hesitation. (Tusi, 1992: p, 341)

Aristotle creates a situation as if the mode of the proposition cannot be mentioned when we talk about the substance and form of the proposition since matter does not exist without form and form without matter.

This must be why Farabi and Ibn Rushd used matter and form as a simile, not because the proposition has a substance and a form, but only to explain the subject of modals more easily. However, Avicenna took a bolder step and showed more clearly that the nature of logic, which Aristotle did not clearly express, and that its relationship with its substance, with its content, is a possible relationship, and that it is not the business of logic to determine the content or matter. For this reason, Farabi and Ibn Rushd used matter and form as a simile, not because the proposition has a substance and a form, but only to explain the subject of modals more easily. However, Avicenna took a bolder step and more clearly demonstrated the artificiality of logic, which Aristotle did not clearly express, and that its relationship with its substance, that is, with its content, is a possible relationship, and that it is not the business of logic to determine the content or matter. In this respect, the study of modals in logic. Doesn't mean it's content. Because modals have two aspects, one related to logic or thought and the other to being. As a matter of fact, Ibn Sina draws attention to these two aspects of modals and informs us that the aspect for the mind is called "probable" and the aspect for existence is called "possible", but this distinction is not fully observed when using the terms probable and possible. (Ibn Sina Al shifa 2017: p, 114) As a matter of fact, when we look at the texts we have, the words possibility and probability are used synonymously. (Fârâbî, 1964: p. 163) Considering the difference between matter and form in logic, when we put forward in principle that the relation between the two is a possible relation, the mood of a proposition may change, but the essence of the proposition, which is the state of the proposition. It will never change that the proposition's negation and the modal's negation are not the same, and a conjunction must always accompany the modal. (Ibn Rushd 1982: p, 118) A brief definition of possibility above is "it is not impossible." However, by including Farabi and Averroes' "time" in this definition, while saying that the absolute possible is the state of being inclined to be in the future or not, Avicenna suggests the possibility of including time. He says that limiting it to the future is not an exact definition, that it is just an exceptional kind of possibility, that being in the future does not necessarily mean not being now in order to be in the future, and that being now does not prevent being in the future if not being in the present does not prevent being in the future. (Farabi, 1964: p. 188) (Ibn Rushd 1982: p, 175) In this respect, he differs from Farabi and Ibn Rushd in the definition of possibility. According to Ibn Sina, what they call real is a secondary possibility. (Ibn Sina Al shifa 2017: p, 44)

It is clear from the explanations made from the beginning that how do we determine whether a proposition is true or false, whether now or in the future? Because we cannot say anything definite about the truth or falsity of a proposition with a possible modal, as in propositions with a necessary or impossible modal. To solve this problem, we need to quantify probability and determine an approximate accuracy. This means that possibility turns into possibility. We can now consider the probability of possibility.

The probability that emerges due to the quantification of the possibility is generally considered from two perspectives. The first one is handled in logic in terms of considering possibility as a problem of truth, and the other in physics in terms of a causality problem. Considering the relationship between knowledge and causality, examining probability from both perspectives yields the same result, and one complements the other. (Ibn Rushd 1990: p, 12)

Aristotle mentions three cases when discussing the cause-effect relationship in his Physique, where he examines natural causation. These cases (1) are mandatory; (2) majority; (3) opportunity and coincidence In fact, according to him, coincidence and coincidences are not considered causes, they are temporary causes. The real cause is the necessary or most common cause. Is it intellect or nature? (Ibn Rushd 1984: p, 117)

Likewise, Farabi divides the causality relationship primarily into two, mainly in terms of time or duration and mostly in terms of the scope of the predicate. Avicenna expands the same distinction in another way and more regularly. According to this, the causality relationship, which includes time and individuals and is primarily possible, can be seen in three cases. These are as follows:

1. While it is possible for most people, it is often not possible.

2. While it is possible most of the time, it is not possible for most people.

3. It is possible both for most and for most people.

Often, after describing the probabilities of the possible, we can interpret the possible in terms of probability. Accordingly, in the context of causality, what is primarily possible in terms of time or terms of individuals, after the necessary and impossible, has information value. Therefore, in scientific experiments, importance is often given to the possible. Because a causality possible with scarcity is not accurate, it is just a coincidence and chance, and this kind of causality is not dealt with in the sciences. Since probability, which is equal to cause or not, is uncertain, it is difficult to predict whether there is a causal relationship and to make a prediction. (Farabi, 1964: p. 52)

In the light of the above information, we can interpret the probability of possibility from another perspective as follows. Here "majority, multiplicity, equality and scarcity" are quantitative concepts. These are also concepts that express relativity. They are indeed "many, few and equal" as a whole. As we know, quantity is divided into multiplicity and magnitude. From another point of view, the same distinction is divided into adjacent and discrete quantities. Count the multiplicity, and measure the size. If so, these concepts are the concepts of number and measurement science. So why study possibility or probability alone in logic books? Because just counting and measuring is not enough to know a quantitative relationship. This count and measurement should be interpreted with a certain accuracy, that is, the information value should be determined. So the problem is; When approached in terms of accuracy, it appears as a logic problem. Probability is therefore the subject of logic.

While Aristotle tries to explain the possibility in metaphysics based on observation, Ibn Sina's starting point is concept or logic; In other words, it is imagination. According to Ibn Sina, the subject of the concept is the essence, what things are. In other words, "What is it?" is the answer to the question. At this level, we grasp the nature of the thing together with its founders. But "being" is not included in our understanding. While we grasp it, we do not consider whether it exists outside the mind. If existence were included in his imagination, there would be no doubt about his existence. Only its founders, who constitute its reality, are included in the imagination of the essence. In short, the definition of something does not include its existence. (Ibn Sina Al shifa 2017: p, 61)

If the being is not the resilience, the founder of the essence, it consists of a mere possibility in terms of being. In other words, the existence of that thing means possible

existence. Therefore, its existence and nature are separate. It needs a reason to come into existence. This reason is a necessary existence, that is, obligatory existence, in the sense that its existence and nature are one. (Ibn Sina Al shifa 2017: p, 169) While Aristotle's need for the concept of "possibility" is to explain metamorphosis, which is the most fundamental problem of the first age, in the context of becoming and decay, Avicenna's need for the same concept is to explain creation in the context of the existence-nature distinction.

Conclusion

The purpose of this study is to highlight the normative side of science, to show that science is essentially evolving through a normal logical structure, and at the same time our everyday knowledge of the real world is formed by normal logic; the normative logic was to demonstrate that existential rules were known through the use of norms by creating the human information system as an extension of existential rules; and on the other hand, to determine the ontological position of norms to analyze real world - possible world separation on the basis of philosophy history on the basis of normative logic. After addressing how norms can be grounded as metaphysical phenomena as well as social phenomena, the physical reality, metaphysical reality, and logical realism that we're focusing on in chapter four lead us to the real world — possible world separation. This distinction, based on mandatory and enabling modes, opens up ways to describe not just (norms) social phenomena, but all facts and situations that are entirely possible. Since depicting facts is made with recommendations, and recommendations for which the corresponding situation is real can be accepted correctly, we should at this point encounter the validation of normative recommendations.

One of the most efficient ways to accurately understand the nature and necessity of Islamic philosophy and to detect the place it occupies in the history of thought by objective metrics is to make comparative studies of the key concepts of this philosophical tradition, free of the pressures of the self-imitation dilemma. As a result of this research, both the different approaches of Islamic philosophy within itself and the comparative studies at the conceptual level between philosophical tradition and other dimensions of Islamic thought have given us wide opportunities to properly understand the idea of Islam as a whole, not just the tradition of Islamic philosophy. In line with this objective, existence and possibility aim to trace the adventure of the opportunity to be a fundamental concept of metaphysics in the process extending to Ibn Sînâ.

Islamic philosophers first met post-Aristotle, Plotinus translations, but the political philosophy, through Ibn al-Rushdie, met the issue of possibility in the Islamic philosophy. The issue of possibility in Islamic philosophy was initiated by Farabi. It divides the propositions of Farabi into 'mandatory, absolute, and possible'. Mandatory premise refers to things that are permanent and their opposites impossible to exist. Possible premise is the approximation of what's possible. The absolute premise is that there are proposals that exist and that are possible to exist in the future, even if they do not exist. Since absolute proposals do not emphasize modality factors such as necessity and possibility, they have also included proposals that declare an existence. Farabi, in his metaphysical sense, uses the notions of potential (being) for mandatory and potential for possible.

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