

## THE ROLE OF MUSLIM SCIENTISTS IN THE DEVELOPMENT OF LOGIC IN THE MUSLIM WORLD

By:

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### Abstract

The present study examines the role of Muslim Scientists in the Development of Logic in the Muslim world. It begins by given the overview of the argument of philosophy meaning in Islam, the beginning of using philosophy in Islamic history and the most important factors contributing to the development of philosophical studies among Muslim scholars. The study seeks to shed the influence of Islamic philosophy religious thought, the changing of religious thought by evaluating theological issues among several schools and philosophers such as God, Qur'an and universe, criticism and the extent of philosophy's influence on emerging new philosophers in Islam such as Ibn Rushd, Avicenna, Ibn Khaldun and finally the use of philosophy to improve research in Islamic Religious Studies by examining major concepts of God, Resurrection, Soul and Spirit.

**Keywords:** *falsafa, Ilm-kalam, essence, existence, logic*

### Introduction

In the religion of Islam, two words are sometimes translated as philosophy—*falsafa* (literally: "philosophy"), which refers to philosophy as well as logic, mathematics, and physics; (Hassan, 14) and *Kalam* (literally "speech"), which refers to a rationalist form of Islamic philosophy and theology based on the interpretations as developed by medieval Muslim philosophers. Islamic philosophy has also been described as the systematic investigation of problems connected with life, the universe, ethics, medicine, science and society as conducted in the medieval Muslim world from Persian (Avicenna, al-Biruni, al-Farabi, al-Ghazali, Khayyam, Khwarizmi, al-Razi, Suhrawardi), Arab (al-Kindi, al-Ashari, Alhazen), and Andalusian

(Averroes, at-Turtushi, Ibn Hazm) Islamic philosophers, scholars and polymaths during the Islamic Golden Age.

Early Islamic philosophy began in the 2nd century AH of the Islamic calendar (early 9th century CE) and lasted until the 6th century AH (late 12th century CE). The period is known as the Golden Age of Islam, and the achievements of this period had a crucial influence on the development of modern philosophy and science in the Western world; for Renaissance Europe, the influence represented from the Islamic Golden Age was "one of the largest technology transfers in world history"(History of Europe). This period began with al-Kindi in the 9th century and ended with Averroes (Ibn

Rushd) at the end of 12th century. The death of Averroes effectively marked the end of a particular discipline of Islamic philosophy usually called the Peripatetic Arabic School, and philosophical activity declined significantly in Western Islamic countries such as Islamic Iberia and North Africa.

Islamic philosophy persisted for much longer in Muslim Eastern countries, in particular Safavid Persia, Ottoman and Mughal Empires, where several schools of philosophy continued to flourish: Avicennism, Averroism, Illuminationist philosophy, Mystical philosophy, Transcendent theosophy, and Isfahan philosophy. Ibn Khaldun, in his *Muqaddimah*, made important contributions to the philosophy of history. Interest in Islamic philosophy revived during the Nahda ("Awakening") movement in the late 19th and early 20th centuries, and continues to the present day. By way of introduction Islamic philosophy refers to philosophy produced in an Islamic society.

Islamic philosophy is a generic term that can be defined and used in different ways. In its broadest sense, it means the world view of Islam, as derived from the Islamic texts concerning the creation of the universe and the will of the Creator. In another sense, it refers to any of the schools of thought that flourished under the Islamic empire or in the shadow of the Arab-Islamic culture and Islamic civilization. In its narrowest sense, it is a translation of *Falsafa*; meaning those particular schools of thought that most reflect the influence of Greek systems of

philosophy such as Neoplatonism and Aristotelianism.

It is neither necessarily concerned with religious issues; exclusively produced by Muslims (Oliver Encyclopedia) nor do all schools of thought within Islam admit the usefulness or legitimacy of philosophical inquiry. Some argue that there is no indication that the limited knowledge and experience of humans can lead to truth. It is also important to observe that, while "reason" (*'aql*) is sometimes recognised as a source of Islamic law, this may have a totally different meaning from "reason" in philosophy.

The historiography of Islamic philosophy is marked by disputes as to how the subject should be properly interpreted. Some of the key issues involve the comparative importance of eastern intellectuals such as Ibn Sina (Avicenna) and of western thinkers such as Ibn Rushd, (Henry) and also whether Islamic philosophy can be read at face value or should be interpreted in an esoteric fashion. Supporters of the latter thesis, like Leo Strauss, maintain that Islamic philosophers wrote so as to conceal their true meaning in order to avoid religious persecution, but scholars such as Oliver Leaman disagree (Oliver, 211).

### **Formative Influences**

Islamic philosophy as the name implies refers to philosophical activity within the Islamic milieu. The main sources of classical or early Islamic philosophy are the religion of Islam itself (especially ideas derived and interpreted from the Quran) and Greek

philosophy which the early Muslims inherited as a result of conquests, along with pre-Islamic Indian philosophy and Persian philosophy. Many of the early philosophical debates centered on reconciling religion and reason, the latter exemplified by Greek philosophy.

### Opposition to Philosophy

Some Muslims oppose the idea of philosophy as un-Islamic. The popular Salafist website IslamQA.info (supervised by Shaykh Muhammad Saalih al-Munajjid of Saudi Arabia) declares philosophy to be an "alien entity":

The terminology of Islamic philosophy did not emerge as a branch of knowledge that is taught in the curriculum of Islamic studies until it was introduced by Shaykh Mustafa Abd al-Raziq – the Shaykh of al-Azhar – as a reaction to western attacks on Islam based on the idea that Islam has no philosophy. But the fact of the matter is that philosophy is an alien entity in the body of Islam (Saalih, e-copy).

The fatwa claims that "the majority of *fuqaha'* [experts in *fiqh*] have stated that it is haraam to study philosophy, and lists some of these:

- Ibn Nujaym (Hanafi) writing in *al-Ashbaah wa'l-Nazaa'im*;
- al-Dardeer (Maaliki) said in *al-Sharh al-Kabeer*;
- Al-Dasooqi (Hanafi) in his *Haashiyah* (2/174);
- Zakariya al-Ansaari (Shaafa'i) in *Asna al-Matalib* (4/182);

- al-Bahooti (Hanbali) said in *Kashshaaf al-Qinaa'* (3/34);

Al-Ghazali declares that:

...of the four branches" of philosophy (geometry and mathematics, logic, theology, and natural sciences), some of the natural sciences "go against shari'ah, Islam and truth", and that except for medicine, "there is no need for the study of nature (al-Ghazali, 22).

Maani' Hammad al-Juhani, (a member of the Consultative Council and General Director, World Assembly of Muslim Youth) (Blankenhorn, 79) is quoted as declaring that:

because philosophy does not follow the moral guidelines of the Sunnah, "philosophy, as defined by the philosophers, is one of the most dangerous falsehoods and most vicious in fighting faith and religion on the basis of logic, which it is very easy to use to confuse people in the name of reason, interpretation and metaphor that distort the religious texts (al-Mawsoo'ah, 419).

Ibn Abi al-Izz, a commentator on *al-Tahhaawiyah*, condemns philosophers as:

the ones who most deny the Last Day and its events. In their view, Paradise and Hell are no more than parables for the masses to understand, but they have no reality beyond people's minds (Saalih, e-copy).

### Early Islamic Philosophy

In early Islamic thought, which refers to philosophy during the "Islamic Golden Age", traditionally dated between the 8th and 12th centuries, two main currents may be distinguished. The first is *Kalam*, which mainly dealt with Islamic theological questions, and the other is *Falsafa*, which was founded on interpretations of Aristotelianism and Neoplatonism. There were attempts by later philosopher-theologians at harmonizing both trends, notably by Ibn Sina (Avicenna) who founded the school of Avicennism, Ibn Rushd (Averroës) who founded the school of Averroism, and others such as Ibn al-Haytham (Alhacen) and Abū Rayhān al-Bīrūnī.

#### *The Concept of Ilmu - Kalam*

*Ilm al-Kalām* is the philosophy that seeks Islamic theological principles through dialectic. In Arabic, the word literally means "speech". One of the first debates was that between partisans of the *Qadar* meaning "Fate", who affirmed free will; and the *Jabarites* meaning "force", "constraint", who believed in fatalism (Wolfson, 3).

At the 2nd century of the Hijra, a new movement arose in the theological school of Basra, Iraq. A pupil of Hasan of Basra, Wasil ibn Ata, left the group when he disagreed with his teacher on whether a Muslim who has committed a major sin invalidates his faith. He systematized the radical opinions of preceding sects, particularly those of the Qadarites and Jabarites. This new school was called *Mu'tazilite* (from *i'tazala*, to separate oneself) (al-Ghazali 98).

The Mu'tazilites looked in towards a strict rationalism with which to interpret Islamic doctrine. Their attempt was one of the first to pursue a rational theology in Islam. They were however severely criticized by other Islamic philosophers, both Maturidis and Asharites. The great Asharite scholar Fakhr ad-Din ar-Razi wrote the work *Al-Mutakallimin fi 'Ilm al-Kalam* against the Mutazalites. In later times, *Kalam* was used to mean simply "theology", i.e. the *duties of the heart* as opposed to (or in conjunction with) *fiqh* (*jurisprudence*), the duties of the body (Leaman, 25).

#### *The Concept of Falsafa*

*Falsafa* is a Greek loan word meaning "philosophy" (the Greek pronunciation *philosophia* became *falsafa*). From the 9th century onward, due to Caliph al-Ma'mun and his successor, ancient Greek philosophy was introduced among the Arabs and the Peripatetic School began to find able representatives. Among them were Al-Kindi, Al-Farabi, Avicenna and Averroës. Another trend, represented by the Brethren of Purity, used Aristotelian language to expound a fundamentally Neoplatonic and Neopythagorean world view (Encyclopedia of Philosophy).

During the Abbasid caliphate, a number of thinkers and scientists, some of them heterodox Muslims or non-Muslims, played a role in transmitting Greek, Hindu and other pre-Islamic knowledge to the Christian West. They contributed to making Aristotle known in Christian Europe. Three speculative thinkers, Al-Farabi, Avicenna and Al-Kindi,

combined Aristotelianism and Neoplatonism with other ideas introduced through Islam (al-Ghazali 92).

### End of the Classical Period

By the 12th century, *Kalam*, attacked by both the philosophers and the orthodox, perished for lack of champions. At the same time, however, *Falsafa* came under serious critical scrutiny. The most devastating attack came from Al-Ghazali, whose work *Tahafut al-Falasifa* (*The Incoherence of the Philosophers*) attacked the main arguments of the Peripatetic School (Wael, 48).

Averroes, Maimonides' contemporary, was one of the last of the Islamic Peripatetic and set out to defend the views of the *Falsafa* against al-Ghazali's criticism. The theories of Ibn Rushd do not differ fundamentally from those of Ibn Bajjah and Ibn Tufail, who only follow the teachings of Avicenna and Al-Farabi. Like all Islamic Peripatetics, Averroes admits the hypothesis of the intelligence of the spheres and the hypothesis of universal emanation, through which motion is communicated from place to place to all parts of the universe as far as the supreme world—hypotheses which, in the mind of the Arabic philosophers, did away with the dualism involved in Aristotle's doctrine of pure energy and eternal matter (Ibn al-Haytam, 67).

But while Al-Farabi, Avicenna, and other Persian and Muslim philosophers hurried, so to speak, over subjects that trenched on traditional beliefs, Ibn Rushd delighted in dwelling upon them with full

particularity and stress. Thus he says, "Not only is matter eternal, but form is potentially inherent in matter; otherwise, it were a creation *ex nihilo*" (Munk, "Mélanges," p. 444). According to this theory, therefore, the existence of this world is not only a possibility, as Avicenna declared, but also a necessity.

### The Role of Logic

In early Islamic philosophy, logic played an important role. Sharia (Islamic law) placed importance on formulating standards of argument, which gave rise to a novel approach to logic in *Kalam*, but this approach was later displaced by ideas from Greek philosophy and Hellenistic philosophy with the rise of the Mu'tazili philosophers, who highly valued Aristotle's *Organon*. The works of Hellenistic-influenced Islamic philosophers were crucial in the reception of Aristotelian logic in medieval Europe, along with the commentaries on the *Organon* by Averroes. The works of al-Farabi, Avicenna, al-Ghazali and other Muslim logicians who often criticized and corrected Aristotelian logic and introduced their own forms of logic, also played a central role in the subsequent development of European logic during the Renaissance.

According to the Routledge Encyclopedia of Philosophy:

For the Islamic philosophers, logic included not only the study of formal patterns of inference and their validity but also elements of the philosophy of language and even of epistemology and metaphysics. Because of territorial disputes

with the Arabic grammarians, Islamic philosophers were very interested in working out the relationship between logic and language, and they devoted much discussion to the question of the subject matter and aims of logic in relation to reasoning and speech. In the area of formal logical analysis, they elaborated the theory of terms, propositions and syllogisms as formulated in Aristotle's *Categories*, *De interpretatione* and *Prior Analytics*. In the spirit of Aristotle, they considered the syllogism to be the form to which all rational argumentation could be reduced, and they regarded syllogistic theory as the focal point of logic. Even poetics was considered as a syllogistic art in some fashion by most of the major Islamic Aristotelians.

Important developments made by Muslim logicians included the development of "Avicennian logic" as a replacement of Aristotelian logic. Avicenna's system of logic was responsible for the introduction of hypothetical syllogism, temporal modal logic and inductive logic. Other important developments in early Islamic philosophy include the development of a strict science of citation, the *isnad* or "backing", and the development of a method to disprove claims, the *ijtihād*, which was generally applied to many types of questions.

### **Discovery of Logic in Islamic Law and Theology**

Early forms of analogical reasoning, inductive reasoning and categorical syllogism were introduced in *Fiqh* (Islamic jurisprudence), *Sharia* and *Kalam* (Islamic theology) from the 7th century with the process of *Qiyas*, before the Arabic translations of Aristotle's works. Later, during the Islamic Golden Age, there was debate among Islamic philosophers, logicians and theologians over whether the term *Qiyas* refers to analogical reasoning, inductive reasoning or categorical syllogism. Some Islamic scholars argued that *Qiyas* refers to inductive reasoning. Ibn Hazm (994–1064) disagreed, arguing that *Qiyas* does not refer to inductive reasoning but to categorical syllogistic reasoning in a real sense and analogical reasoning in a metaphorical sense. On the other hand, al-Ghazali (1058–1111; and, in modern times, Abu Muhammad Asem al-Maqdisi) argued that *Qiyas* refers to analogical reasoning in a real sense and categorical syllogism in a metaphorical sense. Other Islamic scholars at the time, however, argued that the term *Qiyas* refers to both analogical reasoning and categorical syllogism in a real sense (Encyclopedia).

### **Aristotelian Logic**

The first original Arabic writings on logic were produced by al-Kindi (Alkindus) (805–873), who produced a summary on earlier logic up to his time. The first writings on logic with non-Aristotelian elements was produced by al-Farabi (Alfarabi) (873–950), who discussed the topics of future contingents, the number and relation of the categories, the relation

between logic and grammar, and non-Aristotelian forms of inference. He is also credited for categorizing logic into two separate groups, the first being "idea" and the second being "proof"(Bochenski, 10).

Averroes (1126–1198), author of the most elaborate commentaries on Aristotelian logic, was the last major logician from al-Andalus.

### **Avicennian Logic**

Avicenna (980–1037) developed his own system of logic known as "Avicennian logic" as an alternative to Aristotelian logic. By the 12th century, Avicennian logic had replaced Aristotelian logic as the dominant system of logic in the Islamic world (Lenn, 155).

The first criticisms of Aristotelian logic were written by Avicenna (980–1037), who produced independent treatises on logic rather than commentaries. He criticized the logical school of Baghdad for their devotion to Aristotle at the time. He investigated the theory of definition and classification and the quantification of the predicates of categorical propositions, and developed an original theory on "temporal modal" syllogism. Its premises included modifiers such as "at all times", "at most times", and "at some time".

While Avicenna (980–1037) often relied on deductive reasoning in philosophy, he used a different approach in medicine. Ibn Sina contributed inventively to the development of inductive logic, which he used to pioneer the idea of a

syndrome. In his medical writings, Avicenna was the first to describe the methods of agreement, difference and concomitant variation which are critical to inductive logic and the scientific method (Ibn Taymiyyah, 253).

Ibn Hazm (994–1064) wrote the *Scope of Logic*, in which he stressed on the importance of sense perception as a source of knowledge. Al-Ghazali (Algazel) (1058–1111) had an important influence on the use of logic in theology, making use of Avicennian logic in Kalam.<sup>[14]</sup> Despite the logical sophistication of al-Ghazali, the rise of the Ash'ari school in the 12th century slowly suffocated original work on logic in much of the Islamic world, though logic continued to be studied in some Islamic regions such as Persia and the Levant (Steve, 161).

Fakhr al-Din al-Razi (b. 1149) criticised Aristotle's "first figure" and developed a form of inductive logic, foreshadowing the system of inductive logic developed by John Stuart Mill (1806–1873). Systematic refutations of Greek logic were written by the Illuminationist school, founded by Shahab al-Din Suhrawardi (1155–1191), who developed the idea of "decisive necessity", an important innovation in the history of logical philosophical speculation and in favour of inductive reasoning (Morewedge, 234).

### **Cosmological and Ontological Arguments**

Avicenna's proof for the existence of God was the first ontological argument, which he proposed in the

*Metaphysics* section of *The Book of Healing* (Mayer, 18). This was the first attempt at using the method of a priori proof, which utilizes intuition and reason alone. Avicenna's proof of God's existence is unique in that it can be classified as both a cosmological argument and an ontological argument. "It is ontological in so far as 'necessary existence' in intellect is the first basis for arguing for a Necessary Existence". The proof is also "cosmological insofar as most of it is taken up with arguing that contingent existence cannot stand alone and must end up in a Necessary Existence (Fadlo, 74).

### **Distinction between Essence and Existence**

Islamic philosophy, imbued as it is with Islamic theology, distinguishes more clearly than Aristotelianism the difference between essence and existence. Whereas existence is the domain of the contingent and the accidental, essence endures within a being beyond the accidental. This was first described by Avicenna's works on metaphysics, who was himself influenced by al-Farabi.

Some orientalists (or those particularly influenced by Thomist scholarship) argued that Avicenna was the first to view existence (*wujud*) as an accident that happens to the essence (*mahiyya*). However, this aspect of ontology is not the most central to the distinction that Avicenna established between essence and existence. One cannot therefore make the claim that Avicenna was the proponent of the concept of essentialism *per se*, given that existence (*al-wujud*) when thought of

in terms of necessity would ontologically translate into a notion of the "Necessary-Existence-due-to-Itself" (*wajib al-wujud bi-dhatihi*), which is without description or definition and, in particular, without quiddity or essence (*la mahiyya lahu*). Consequently, Avicenna's ontology is 'existentialist' when accounting for being-*qua*-existence in terms of necessity (*wujub*), while it is essentialist in terms of thinking about being-*qua*-existence in terms of "contingency-*qua*-possibility" (*imkan* or *mumkin al-wujud*, meaning "contingent being" (Irwin, e-copy).

Some argue that Avicenna anticipated Frege and Bertrand Russell in "holding that existence is an accident of accidents" and also anticipated Alexius Meinong's "view about nonexistent objects." He also provided early arguments for "a "necessary being" as cause of all other existents (Razavi, 129).

The idea of "essence preceding existence" is a concept which dates back to Avicenna and his school as well as Shahab al-Din Suhrawardi (Nahyan, 209) and his Illuminationist philosophy. "Existence preceding essence", the opposite (existentialist) notion, was developed in the works of Averroes and Mulla Sadra's transcendent theosophy (Fancy, 42).

### **Resurrection**

Ibn al-Nafis wrote the *Theologus Autodidactus* as a defense of "the system of Islam and the Muslims' doctrines on the missions of Prophets, the religious laws, the resurrection of the body, and the transitoriness of the world." The book presents rational



arguments for bodily resurrection and the immortality of the human soul, using both demonstrative reasoning and material from the hadith corpus as forms of evidence. Later Islamic scholars viewed this work as a response to Avicenna's metaphysical argument on spiritual resurrection (as opposed to bodily resurrection), which was earlier criticized by al-Ghazali (Seyyed, 315).

### **Soul and Spirit**

The Muslim physician-philosophers, Avicenna and Ibn al-Nafis, developed their own theories on the soul. They both made a distinction between the soul and the spirit, and in particular, the Avicennian doctrine on the nature of the soul was influential among the scholars. Some of Avicenna's views on the soul included the idea that the immortality of the soul is a consequence of its nature, and not a purpose for it to fulfill. In his theory of "The Ten Intellects", he viewed the human soul as the tenth and final intellect.

Avicenna generally supported Aristotle's idea of the soul originating from the heart, whereas Ibn al-Nafis on the other hand rejected this idea and instead argued that:

the soul "is related to the entirety and not to one or a few organs." He further criticized Aristotle's idea that every unique soul requires the existence of a unique source, in this case the heart. Ibn al-Nafis concluded that "the soul is related primarily neither to the spirit nor to any organ, but rather to the entire matter whose temperament is prepared to

receive that soul" and he defined the soul as nothing other than "what a human indicates by saying 'I' (Craig, 165).

### **Thought Experiments**

While he was imprisoned in the castle of Fardajan near Hamadhan, Avicenna wrote his "Floating Man" thought experiment to demonstrate human self-awareness and the substantiality of the soul. He referred to the living human intelligence, particularly the active intellect, which he believed to be the hypostasis by which God communicates truth to the human mind and imparts order and intelligibility to nature. His "Floating Man" thought experiment tells its readers to imagine themselves suspended in the air, isolated from all sensations, which includes no sensory contact with even their own bodies. He argues that, in this scenario, one would still have self-consciousness. He thus concludes that the idea of the self is not logically dependent on any physical thing, and that the soul should not be seen in relative terms, but as a primary given, a substance (Osman, 11).

This argument was later refined and simplified by René Descartes in epistemic terms when he stated: "I can abstract from the supposition of all external things, but not from the supposition of my own consciousness (Osman, 17).

### **Logic on Time**

While ancient Greek philosophers believed that the universe had an infinite past with no beginning, early medieval philosophers and theologians developed the concept of

the universe having a finite past with a beginning. This view was inspired by the creationism shared by Judaism, Christianity and Islam. The Christian philosopher John Philoponus presented a detailed argument against the ancient Greek notion of an infinite past. Muslim and Arab Jewish philosophers like Al-Kindi, Saadia Gaon, and Al-Ghazali developed further arguments, with most falling into two broad categories: assertions of the "impossibility of the existence of an actual infinite" and of the "impossibility of completing an actual infinite by successive addition"(Jan, 152).

### **Logic on Truth**

In metaphysics, Avicenna (Ibn Sina) defined truth as:

What corresponds in the mind to what is outside it (Bradley, 24).

Avicenna elaborated on his definition of truth in his *Metaphysics*:

The truth of a thing is the property of the being of each thing which has been established in it (Sabra, e-copy).

In his *Quodlibeta*, Thomas Aquinas wrote a commentary on Avicenna's definition of truth in his *Metaphysics* and explained it as follows:

The truth of each thing, as Avicenna says in his *Metaphysica*, is nothing else than the property of its being which has been established in it. So that is called true gold which has properly the being of gold and attains to the established determinations of the nature of gold. Now, each thing has properly being in some nature because it stands under the

complete form proper to that nature, whereby being and species in that nature is (Sabra, e-copy)

Early Islamic political philosophy emphasized an inexorable link between science and religion and emphasized the process of *ijtihad* to find truth.

Ibn al-Haytham (Alhacen) reasoned that to discover the truth about nature, it is necessary to eliminate human opinion and error, and allow the universe to speak for itself (Plott, 465). In his *Aporias against Ptolemy*, Ibn al-Haytham further wrote the following comments on truth:

Truth is sought for itself [but] the truths, [he warns] are immersed in uncertainties [and the scientific authorities (such as Ptolemy, whom he greatly respected) are] not immune from error...(Cillis, e-copy).

Therefore, the seeker after the truth is not one who studies the writings of the ancients and, following his natural disposition, puts his trust in them, but rather the one who suspects his faith in them and questions what he gathers from them, the one who submits to argument and demonstration, and not to the sayings of a human being whose nature is fraught with all kinds of imperfection and deficiency. Thus the duty of the man who investigates the writings of scientists, if learning the truth is his goal, is to make himself an enemy of all that he reads, and, applying his mind to the core and margins of its content, attack it from every side. He should also suspect himself as he performs his critical

examination of it, so that he may avoid falling into either prejudice or leniency (Cillis e-copy).

I constantly sought knowledge and truth, and it became my belief that for gaining access to the effulgence and closeness to God, there is no better way than that of searching for truth and knowledge (Cillis, e-copy)

### Freewill and Predestination

The Freewill versus predestination issue is one of the "most contentious topics in classical Islamic thought."<sup>[36]</sup> In accordance with the Islamic belief in predestination, or divine preordainment (*al-qadā wa'l-qadar*), God has full knowledge and control over all that occurs. This is explained in Qur'anic verses such as:

Say: 'Nothing will happen to us except what Allah has decreed for us: He is our protector'(Q9:51).

For Muslims, everything in the world that occurs, good or bad, has been preordained and nothing can happen unless permitted by God. According to Muslim theologians, although events are pre-ordained, man possesses free will in that he or she has the faculty to choose between right and wrong, and is thus responsible for his actions. According to Islamic tradition, all that has been decreed by God is written in *al-Lawh al-Mahfūz*, the "Preserved Tablet(Cohen, 4).

### Criticism among the Schools of Thought

Philosophy has not been without criticism amongst Muslims, both contemporary and past. The imam

Ahmad ibn Hanbal, for whom the Hanbali school of thought is named, rebuked philosophical discussion once, telling proponents of it that he was secure in his religion but that they were "in doubt, so go to a doubter and argue with him (instead). Today, Islamic philosophical thought has also been criticized by scholars of the modern Salafi movement.

There would be many Islamic thinkers who were not enthusiastic about its potential, but it would be incorrect to assume that they opposed philosophy simply because it was a "foreign science". Oliver Leaman, an expert on Islamic philosophy, points out that the objections of notable theologians are rarely directed at philosophy itself, but rather at the conclusions the philosophers arrived at. Even the 11th century al-Ghazali, known for his *Incoherence of the Philosophers* critique of philosophers, was himself an expert in philosophy and logic. His criticism was that they arrived at theologically erroneous conclusions. In his view the three most serious of these were believing in the co-eternity of the universe with God, denying the bodily resurrection, and asserting that God only has knowledge of abstract universals, not of particular things, though it should be noted that not all philosophers subscribed to these same views.

In recent studies by Muslim contemporary thinkers that aim at "renewing the impetus of philosophical thinking in Islam," the philosopher and theorist Nader El-Bizri offers a critical analysis of the conventions that dominate mainstream academic and epistemic approaches in

studying Islamic philosophy. These approaches, of methodology and historiography are looked at from archival standpoints within Oriental and Mediaevalist Studies; fail to recognize the fact that philosophy in Islam can still be a living intellectual tradition. He maintains that its renewal requires a radical reform in ontology and epistemology within Islamic thought. El-Bizri's interpretations of Avicenna (Ibn Sina) from the standpoint of Heidegger's critique of the history of metaphysics, and specifically against the background of the unfolding of the essence of technology, aim at finding new pathways in ontology that are not simply Avicennian nor Heideggerian, even though El-Bizri's approach in rethinking *falsafa* amounts to a "Neo-Avicennism" that carries resonances with novel modern philosophical ways of reading Aristotelianism and Thomism. El-Bizri engages contemporary issues in philosophy through a fundamental critical analytic of the evolution of key concepts in the history of ontology and epistemology. Nader El-Bizri is a modernist in outlook since he aims at bringing newness to the tradition rather than simply reproduce it or being in rupture with it.

### **Conclusion**

Contributions of Muslims in science to the development of Muslim world are a noteworthy expansion in human antiquity. The Muslim scholars did not only conserve the ancient knowledge, but also transform it into major new contributions to basic science and technology. The basic contributions were in the fields such as astronomy, chemistry, mathematics,

philosophy, geography, and physics, which constitute the basis of modern science and technology. They also provided connections between Arab and the other parts of the world like the Far East, Middle East, and European regions by distributing knowledge. Islamization of knowledge is the correct solution for our problems. It seems that Islamization of knowledge is essential to be established because it will cleanse the contemporary corrupted knowledge which is believed to be the main downfall of Muslims. Muslim societies can embrace the spirit of scientific progress and accomplishment of early Islamic scholars. They could adopt and adapt the technological advancements of the West to address their own conditions and contribute their own discoveries through promoting Islamization of knowledge in their education sector because it integrates the beautiful heritage of Islam with modern science by undertaking a certain methodology. Science and technology can prosper among Muslims again, and others, if the conditions for free inquiry, proper incentives, institutional support, and the benefits of science are encouraged.

### **Recommendations**

1. Muslims should be well informed and acquainted on the essence of zeal and dedication towards learning or studying the science subjects having chosen them as their future area of specialization.
2. Muslim groups such as MSS, NATAIS, FOMWAN, NASFAT, IZALA etc should create more avenues for workshops, seminars, symposiums in order to disseminate and enlightened the

Muslims the rationale behind studying science subjects in our various areas of endeavour, as no society can grow or compete with its opponent if it lacks competency in such field.

3. There should be more dedication from the Muslims saddled with the responsibility of teaching the science subjects even though there is this challenge of non availability of science equipments or laboratories in most of our schools.
4. Government should do more in terms of encouraging the Muslims by providing an enabling environment or atmosphere for conducive learning that can equip the Muslims to compete with their counterparts at any given time.

#### Work Cited

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