Classical logic in Islamic philosophy - creating dichotomy or catalyst?

Safia Aoude

Using classical Greek logic to explain the concept of a metaphor to his readers, the famous Islamic scholar Ibn Sina wrote in his book, “Qiyâs”: “So and so is beautiful. Everything beautiful is a moon. Therefore so and so is a moon.” On the other hand, the equally famous Islamic scholar Imam al-Shafi’i is quoted to have said: "People did not become ignorant, nor differed except after their abandonment of the Arabic language and their inclination to the language of Aristoteles!"

The words of Ibn Sina and Imam al-Shafi’i present two opposites; one is using the methodology of classical Aristotelian logic to elaborate a metaphysical Islamic concept, the other one is claiming that Aristotelian logic has ruined the basics of Islamic creed by the limitation of its semantics. Obviously, classical logic did play an important role in the development of philosophical ideas among Muslim scholars and philosophers, but there seems to be a dichotomous difference in approach.

The aim of my paper is to look into the views of some of the well known thinkers in Islamic philosophy, extracting their specific opinions towards Aristotelian classical logic. What use did Muslim philosophers have for Aristotelian logic in the development of their own ideas?

The early appearance of logic into Islamic context

‘Logic’ (Greek: λογική, logikē) is the formal systematic approach of reasoning, established through formative rules of definition, argumentation, validity and fallacies, as developed by the Greek philosopher Aristotle in his work Organon (app. 340 BC). With emphasis on divalent logic, the science of classical Greek argumentation was traditionally divided into deductive and inductive logic, forming the basis of classical and modern scientific methodology.

Other classical civilizations (China, India) also developed argumentative methodologies, and especially Indian philosophies of logic had some influence on Persian and shia-Muslim development of logic. Shia-islamic jurisprudence and philosophy relies heavily on the use of logic for reasoning. However, this paper will concentrate solely on the sunni-Muslim approach to classical logic.

‘Ilm- Kalâm (Ar.: علم الكلام) is the name for the classical Muslim way of seeking Islamic reasoning through Aristotelian dialectics. In Arabic the concept means “knowledge of speaking”. The Kalâm tradition in Islam is based on finding theological premises through debate and argumentation under a "rational" discussion. In short, ‘Ilm al-Kalâm is the science in which Islamic agīdah (creed) is understood not merely within the framework of the Qur’ān, or the Sunnah, or the opinions of the first three generations of Muslims (7th century) but also through reasoning of the scholars. ‘Ilm al-Kalâm was the forerunner of the later stylized argumentative methodology called mantiq – the Islamic tool of reasoning.

The development of *mantiq* (Ar.: منطق) in classical Islam originally began with the Islamic etiquette of differing in opinion (ِْعُلَم ال-يِکْتِلَاف) among scholars of Islamic shari’a. In the urbanized Abbasid caliphate, Muslim scholars held regular debates among each other and with non-Muslims in order to sharpen their intellect through rhetoric skills, and to clarify issues of faith and jurisprudence.² However, in the 8th century *mantiq* was considered initially to be part of the foreign sciences, mainly used for defining points of language. Since the Arabic language differed in syntax and grammar from the Greek language, many traditional Arabic Muslim scholars initially refused to accept *mantiq* as something of value to the development of Islamic philosophy. Thus we see early Muslim philosophers and scholars, such as Imam Shafi’i, rejecting the idea of Aristotelian logic playing a possible part in Islamic discourse.

**The introduction of logic into Islamic philosophy (al-Kindi)**

The Muslim philosopher Ya’qūb ibn Iṣḥaq al-Kindi (830) is generally described as being the first Muslim academic to translate large parts of the *Organon* into Arabic, adding his comments to the original text.³ He worked to analyze parts of the *Organon* into an Islamic context, trying to use classical methodology and philosophy (based on ideas of Aristotle and Plato) in answering questions of religious nature. His ideas stirred the already rising intellectual battle between Mutazilites and Ash’arites, and it is said that al-Kindi’s works have prepared the philosophical seeds for many of the later intellectual discourses between Muslim philosophers and scholars.⁴

**Defending Aristotle (Al-Fārābī)**

In the ninth century the Muslim Abbasid scholar Abū Nasr al-Fārābī (872-950) made his own translation of *Organon* (and other works of Aristotle), adding his own comments and writing his own treatises, mainly on the subject of syllogism. He also translated and commented on the analogical interference of works ascribed to Stoic logic. In fact, al-Farabi is known to have developed an independent definition of inductive syllogism based on human experience, foregoing European philosophers like Immanuel Kant, by including the methodology of analogical inferences into Islamic *mantiq*. In that way al-Farabi strengthened the essence of *qiyaṣ* (analogy) in Islamic shari’a.

In Al-Farabi’s famous treatise “Iḥsā’ al-‘Ulūm”, we find him “enumerating the sciences” the same way Aristotle did in *Organon*, dividing reason into 8 categories of argumentative definitions. Al-Farabi rejected the classical Muslim idea of *mantiq* only being useful for analysis of foreign grammar, claiming that rules of logic apply universally to all the languages of

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² These debates and translations of classical Greek works took place in the بيت الحكمة – the first Muslim academical institution, established in 830 in Baghdad
³ al-Kindi (c.873) Rasa’il al-Kindi al-falsafyya (The Philosophical Treatises of al-Kindi), ed. M.A.H. Abu Ridah, Cairo: Dar al-fikr al-arabī, 2 vols in 1, 1953
mankind, and not just to grammar – even to the “inner language”, i.e. the metaphysics of reasoning.\(^5\)

Al-Farabi’s knowledge of and influence on the development of logic into Islamic philosophy was so apt, he was nicknamed “the Second Teacher” (referring to the Arabic habit of calling Aristotle “the First Teacher”).

Philosophically, al-Farabi became famous for converting the legal tradition of classical Muslim mantiq from metaphysical understanding to pure scientific methodology, therein describing the limitations of human knowledge when trying to define Allah (swt).\(^6\) This would later become a major point of argument against the validity of his philosophy by ibn-Taymiya.

**Accepting logic as part Islamic conceptualism (Ibn Sina)**

Living in the Eastern part of the Muslim world, relying on intuition and autodidact knowledge, the Muslim scholar, scientist and philosopher Al-Husayn Ibn Abdallah Ibn Sina (980-1037) also translated and commented on Aristotle. It is said that Ibn-Sina allegedly read Aristotle’s “Metaphysics” 40 times, but was supposedly still unable to understand its contents, until he read al-Farabi’s “Intentions of Aristotle’s Metaphysics”\(^7\) finally opening his eyes to the ideas of classical logic.

According to Professor Aref Al-Attari, Ibn Sina describes the purpose of logic as “one of enabling the intellect to acquire 'knowledge of the unknown from the known'.”\(^8\) And indeed, Ibn Sina used the Islamic definition of “concept” (ma’a\(^{‘}\)na) as a semantic value for any physical representation of a metaphysical notion, laying the methodical grounds for the later Western development of conceptualism.\(^9\)

> *What corresponds to the mind to what is outside it.*\(^{10}\)

Ibn Sina’s biggest contribution to the history of logic was probably his presentation of a new system of logic, which actually replaced the use of Aristotelan logic in medieval philosophy. He sophisticated the Stoic traditions of hypothetical syllogism, and developed temporally modalized syllogism for use in scientific methodology.

**The logical causality of fire and cotton (al- Ghazali)**

The Muslim philosopher and scholar Mohammed Ibn Ghazâli (1058-1111) owes both to Ibn Sina and to al-Farabi in his famous work on Islamic logic *Tahafut al-Falasifah* (The Incoherence of the Philosophers), in which he proposed and defended the Ash’arite theory of occasionalism. *Tahafut al-Falasifah* is a summary of Ibn Sina's original philosophical doctrines, wherein Ghazali is pointing out 17 logical errors in the treatise of the latter, at some points even accusing Ibn Sina of heresy.

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\(^5\) Majid Fakhry: “A History of Islamic philosophy”, Columbia University Press, New York, 1983, p. 113


\(^9\) William of Ockham cites Ibn Sina’s philosophical definitions of semantics as direct inspiration for his theory on conceptualism.

\(^10\) Osman Amin (2007), "Influence of Muslim Philosophy on the West", Monthly Renaissance no 17, page 11
Al-Ghazali wanted to fully separate logic methodology from (Greek) philosophy, using logic and rationalism as argumentative tools for defending Islamic values and doctrines. Logic was not to be a part of Islamic philosophy, but only a tool for extracting useful hidden knowledge. As an example of this, Al-Ghazali wrote that “when fire and cotton are placed in contact, the cotton is burned directly by God rather than by the fire”, a claim which he defended using logic methodology by reasoning that fire was inanimate, burning the cotton only upon coming into contact with it, but not cause the cotton to burn due to a reason or will. The argument that scientific observations and inductions ultimately are expressions of a supermundane will can be found also in today’s arguments for theistic evolution. In *Tabafut al-Falasifah* Ghazali makes a clear reference to the classical Greek cosmological argument – the “First Cause” or “First Being” - which was heavily debated by Aristotle and Plato.

Back to Greece (Ibn Rushd)
The Muslim philosopher Muhammed Ibn Rushd (1126-1198) commented intensively on the works of Aristotle; however he had to rely on former Arabic translations of Aristotle’s works. His philosophical approach towards logic was that logic is an important tool for the discovery of truth, alongside Divine revelations and Prophetic traditions. Because different individuals have different levels of comprehension, Allah (swt) speaks to humans through three kinds of discourses: dialectical (*al-aqwil al-jadaliyya*); rhetorical (*al-aqwil al-khitabiyya*) and demonstrative syllogism (*al-aqwil al-burhaniyyah*).

Ibn Rushd also advocated logic as a prerequisite to interpretation of Islamic revelations and Prophetic traditions. Refuting Al-Ghazali’s *Tabafut al-Falasifah*, Ibn Rushd wrote *Tabafut al-Tabafut* (Refuting the Refuse), pointing out Ghazali’s errors in verbatim. Concerning the application of classical logic into a Islamic legally valid context, Ibn Rushd’s more important work was probably *Kitab al-Kashf* – a philosophical critique on the Ash`arite system of mantiq, proposing as stricter (or more ostentative) application of Aristotelian logic in Islamic discourse.

Acknowledging Ibn Sina (al-Razi, al-Tusi)
Defending Ibn Sina’s pinpoint of Aristotelian fallacies, the Muslim philosopher Nasir al-Tusi (1201-1274) reflected on the metaphysical weakness of assertoric statements, thereby moving Islamic philosophy into the interesting realms of polyvalent logic. Likewise, the Muslim thinker and scholar Fakhr ad-Din al-Râzi (1150-1210) supported Ibn Sina’s critique of Aristotle’s "first figure", using Ibn Sina’s work to formulate a Muslim system of inductive logic, foreshadowing the modern system of inductive reasoning developed by

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11 Al-Ghazali: *Tabafut al-Falsifah*, p. 281-283
Rebuttal of mantiq from Islamic philosophy (Ibn Taymiya)

The arguments of the Muslim scholar and philosopher Taqi al-Din Ibn Taymiya (1263-1328) presented a philosophical break with the notion of using logic in Islamic shari'a and philosophy.

Ibn Taymiya claimed that logic had corrupted man in his quest for God’s rida (acceptance) by the use of classical Greek logic, resulting in often heretical metaphysical conclusions reached by Islamic philosophers, theologians, mystics, and others. In order to clean Islamic philosophy of these errors, Ibn Taymiya claimed that one had to revert to the position taken by the early Muslim scholars – such as imam Shafi’i – abandoning any later ideas that had been formed on the supportive basis of reasoning.

In his critical thesis on logic (Jab'd al-Qāri'ha fi Tajrīd al-Naîhā) Ibn Taymiyyah argued against the certainty of syllogistic arguments, preferring the Islamic doctrine of analogy (qiyâs) instead of syllogism. His argument is that conclusions founded on induction cannot themselves be certain but only probable. Thus, a syllogism based on such concepts is no more certain than an argument based on analogy. He claimed that even scientific induction itself is founded on a process of analogy. His own model of analogical reasoning was based on that of juridical arguments.15

For Ibn Taymiya the logical fallacies of syllogism proved the inability of logic as instrument of true reasoning and of any true comprehension of creation: “Syllogism…resembles the flesh of a camel found on the summit of a mountain. The mountain is not easy to climb, nor the flesh plump enough to make it worth hauling.”16

Ibn Taymiya’s critique of classical logic and his idea that analogy can be more valid than syllogism, has taken very different philosophical roads. Today his works are forming both the basis of Islamic religious fundamentalism (salafîya), but have also become philosophical inspiration for the development of ontological structures in semantic networks for artificial intelligence in computer science!17

Revival of mantiq in modern Islamic philosophy

After 500 years of Islamic philosophical discourse mantiq had finally become an accepted part of Islamic science in the 12th century, and mantiq was taught widely in madrasas (Islamic

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13 Muhammad Iqbal, The Reconstruction of Religious Thought in Islam, ”The Spirit of Muslim Culture” (cf. [2] and [3])
http://spot.colorado.edu/~rmas/MasQiyas1998.pdf
schools), especially to the students of the Shafa’i and Hanafi law schools; incorporating mantiq as an integrated part of Islamic curriculum.

Yet, in the 14th century we see Islamic philosophers, such as Ibn Khalduñ, defending the idea that logic is unsuitable for definition of religious creeds like tawhid (God’s oneness), the Divine characters, the truth of prophecy or the Akhirah (the Afterlife). The discourse on logic and its application into Islamic philosophy seems to linger on without anyone getting upper hand.

True to Arabic Muslim traditions, the excellence of mantiq was praised even through poetry. In early 16th century the Muslim cholar Abd ar-Rahman al-Akhdari wrote his famous poem As-Sullam al-Munawraq Fi Ilm al-Mantiq. This “Ornamented Ladder into the Science of Logic” explains the basics of Aristotelan logic for using it to support Islamic creed (aqidah) and jurisprudence (fiqih) in 144 beautiful constructed verses.18

Finally, traces of Islamic logic (mantiq) are clearly visible in the arguments used by the Seljuk satirical narratives of Nasreddin Hoca (13th century). Nasredding Hoca’s adventures and his often absurd, but rational reasoning reflect the epistemology of Islamic mantiq, exploring the borders of classical logical arguments.19

Today, several modern or contemporary Islamic philosophers have chosen to regard the science of logic as an arbiter between traditional Islamic knowledge and modern physical science, whereas, Mantiq, in its purest Islamic form, is mostly used in connection with jurisprudence and rarely as a tool for philosophical reflection.20

Conclusion
Evidently, Muslim philosophers relied heavily on the use of classical Greek logic to both support and refute their ideas and arguments. Some have embraced the methodology of classical logic in its purest form (Ibn Rushd), others have tried to adapt the merits of logic into Islamic philosophy (al-Ghazali), while others have rejected the idea of logic as valid part of an Islamic concept (Ibn Taymiyyah).

However, out of the 1400 year long religious and intellectual discourse on the topic of Aristotelian logic, a distinctive Islamic methodology of reasoning has emerged (mantiq), which is now considered curriculum at Islamic schools, and presented to the outside world as something specifically Islamic.

One could claim that without the works of Aristotle, mantiq would probably never have been created on its own. But in virtuous support of the 1400 years of intensive Islamic discourse on Aristotelian logic, there can’t be left any doubt that Islamic philosophy has proved to be a vital catalyst for today’s modern concepts of logic and reasoning.

References:

18 Shaykh Hamza Karamali from the renowned SunniPath Academy is using “As-Sullam” as basic syllabus for teaching mantiq to his students.
20 Dr. Ismail al-Farüki is one of them
Paul Tomassi: “Logic”, Routledge, 1999