

## Ghazālian Synthesis

Let us conclude this section with the views of another major figure of the Islamic tradition whose honorific title, the “proof of Islam” (*Hujjat al-Islām*), indicates the esteem with which he is held in the tradition: Abū Ḥāmid al-Ghazālī, who remains one of the most celebrated scholars of Islamic thought and who lived in that turbulent period of Islamic history which, according to the historian Abū'l-Fidā',<sup>1</sup> was marked by a state of abasement and decline. Faced with internal strife and external threats,<sup>1</sup> the Muslim world lived with a marked presentiment of a coming calamity. Trained in Islamic jurisprudence (*fiqh*), a practitioner of kalām in the Ash'arite tradition, philosopher and, eventually, a mystic who would write one of the most celebrated works of Islamic thought, *Ihyā' ulūm al-Dīn* (*The Revival of the Religious Sciences*),<sup>2</sup> al-Ghazālī's various works contain direct references to his ideas on the relationship between Islam and science. He is also often accused of having given a coup de grace to philosophy as well as being the cause of decline of the scientific tradition in Islamic polity, a charge that will be explored in the next chapter.

What made al-Ghazālī's corpus of varied works—ranging from intricate branches of jurisprudence to philosophy and mysticism—so important for the subsequent generations was a transparent growth of an inner clarity and certitude he acquired through a painful period of “spiritual crisis” which has been vividly recorded in his autobiography, *al-Munqidh min al-Dalāl* (*Deliverance from Error*).<sup>3</sup> For an understanding of al-Ghazālī's views on the relationship between natural sciences and Islam, it is imperative to view his works on the subject within the framework of his other works, otherwise one risks the reading of texts in isolation and out of context, leading to erroneous conclusions—something that has been repeatedly done in the case of al-Ghazālī. Working within the framework of Ghazālian thought, we understand that when he uses the word *ilm*—often translated as “science” with obvious reduction of the meaning of the Arabic term—he uses it in the sense in which it has been understood as a comprehensive term, covering all subjects. Given to an almost obsessive habit of carefully defining his terms, al-Ghazālī devoted a whole chapter, “On the nature of sciences” (*al-kalām fi haqā'iq al-ʿulūm*), in his book on the principles of jurisprudence, *Usūl al-fiqh*. “Knowledge (*al-ilm*),” he said, “cannot be defined”.<sup>4</sup> Explaining his statement, he said that our inability to define knowledge does not indicate our ignorance about it and that we can merely define it by its branches and what they are. But what is more important for our discussion is neither the two major divisions of knowledge that he enumerates as being Eternal and Accidental, nor his clear exposition of the Eternal Knowledge as being solely the property of the Creator but the fact that he states that when one has attained knowledge of the second category, which he divides into immediate (*ḥajmiyy*) and theoretical (*nazarīyy*), there remains no difference between the various branches of knowledge because knowledge itself obliterates all such divisions. This profound insight into the Islamic epistemology is often overlooked in Ghazālian studies and stress is placed on al-Ghazālī's classification of knowledge and the seekers of knowledge; the latter into four types: the al-Mutakallimūn, the esoterics (*al-Baṭiniyya*), the philosophers, and the Sufīs. In *Maqasid al-Falasifah*,

1. Al-Andalus was in revolt, the ʿAbbāsid caliphate was at its lowest state of power, Peter the Hermit was summoning men to the Crusades which would result in the founding of a principedom in Rahā in the Euphrates valley in 490/1097 and in Antioch in 491/1098 and the conquest of Jerusalem in 492/1099 and that of Tripoli (of Lebanon) in 495/1102, Shīʿites and Sunnīs were fighting each other, Ashaʿrites and Muʿtazilites were pitched against each other and the Bāṭinite peril was on the rise.
2. Numerous editions exist of this major work of Islamic scholarship. I have used the five volume edition published by al-Maktaba al-ʿaṣriyya, Beirut in 1996; the English translation of this seminal work is currently being published by the Islamic Text Society, Cambridge, England; some books of *Ihyā'* have also been published by Fons Vitae, Louisville, KY, USA.
3. Many editions of the Arabic text exist; for references, see the edition published by Muʿassat-ul-Kitāb al-Thaqāfiyya, Beirut in 1991 and the excellent English translation by R.J. McCarthy, Fons Vitae, Louisville in 1980. This annotated edition also contains five other key texts by al-Ghazālī.
4. “*inna al-ʿilma la ḥadda lah.*” *Al-Mankhūl min taʿliqāt al-uṣūl*, ed. Muḥammad Hasan Hitu (1970), Dār al-Fikr, Damascus, p. 42.

(*The Aims of the Philosophers*), al-Ghazālī divided sciences of the philosophers into four major categories: mathematical (*al-riyādiyyāt*), logical (*al-mantiqīyyāt*), natural (*al-tabīʿīyyāt*) and metaphysical (*al-ilāhīyyāt*) with politics, economics and ethics being subdivisions of metaphysics. In the second section of *Ihyāʾ*, knowledge is divided into *ʿulūm al-sharīʿyya* (sciences of the *Sharīʿa*) and *ghayr-sharīʿyya* (non-*Sharīʿa* sciences). To the latter belong mathematics and medicine, which al-Ghazālī described as praiseworthy sciences and *farḍ kifāya*, meaning that there should be enough Muslims who are experts in these fields to the degree that they can fulfill the needs of the Islamic society. This last point brings us to the major thrust of Ghazālīan thought and concerns.

Seen within the framework of his times, al-Ghazālī's whole life seems to have been devoted to the revival of the Islamic polity in all aspects and most of all to the revival of the same pristine spirit of Islam that had once given birth to a civilization deeply conscious of its relationship with the Eternal and the Everlasting. This pronounced and oft-articulated concern in Ghazālīan thought was in direct response to his times, rife as they were with powerful political, social and intellectual conflicts that threatened to annihilate the Islamic community as a cohesive community of believers.

Deeply concerned as he was with the overall well-being of the Islamic society, al-Ghazālī felt compelled to classify and set limits of each science in as precise a manner as possible and with a clear aim of regulating the life of the community which, in his view, was at the brink of a major catastrophe. Thus when he defines sciences such as mathematics and medicine as *farḍ kifāya*, he is actually placing the practice of these sciences within the larger framework of the goals and aims of the Islamic society as he sees them. This means that the society at large would be committing a sin if it neglected these sciences. Likewise, when he criticizes excessiveness and indulgence, he has the same goal in mind. But his critique is often taken as his opposition to the cultivation of natural sciences *a la* Goldzahir; this totally ignores the fact that al-Ghazālī uniformly applies the same criteria against over-indulgence to the “religious sciences”, even to jurisprudence, the queen of Islamic sciences. Thus when he blames students of jurisprudence for their indulgence in minute details of the *Sharīʿa*, he does so with the clear understanding of the goals of acquisition of knowledge within the lifespan granted to individuals—a human condition to which he was excessively sensitive.

Ghazālīan thought is deeply rooted in the Qurʾān. Moreover, having passed through his “spiritual crisis”, he attained a gnosis of the external reality that is characteristically mystical. Thus when he declares in his *Kitāb Jawāhir al-Qurʾān (The Jewels of the Qurʾān)*, “Rather, I should say that through clear insight free from doubt, it has become apparent to us that in possibility and potentiality, there are sciences which have not yet come into existence, although they are within human reach and there are sciences which once existed but which have now been effaced so that there is not a man on the surface of the earth who knows [them]”,<sup>5</sup> he is making an epistemological claim and when he states that “there are still other sciences the understanding and acquisition of which are by no means in the power of human beings but which are possessed by some of the angels drawn near [to God] because possibility is limited in the case of human beings while in the case of the angels it is limited to the relatively highest perfection”, he is making explicit reference to an hierarchy.<sup>6</sup> And when he makes the claim that “the principles of those sciences which we have enumerated and of those which we have not, are not outside the Qurʾān, for all of these sciences are drawn out of one of the seas of knowledge of God (may He be exalted), that is, the sea of [knowledge of His] works,” he is making an ontological statement that all things, including human knowledge, depend for their existence on the Divine.

Al-Ghazālī considered knowledge of many branches of natural science as an essential prerequisite for understanding the Qurʾān. Narrating the words of Abraham from the Qurʾān,

5. *Jawāhir*, p. 46 of the English translation, slightly emended.

6. Already mentioned in *Ihyāʾ*, where he sates: “Among the creatures of God, only the angels, human beings and jinn are endowed with intelligence. Man's position is below that of the angels, whose qualities he should try to acquire.” *Ihyāʾ*, vol. i, p. 236.

When I fall ill, it is He Who restores me to health,<sup>7</sup> he says that this can only be understood by “him who knows the science of medicine completely, for this science means nothing but all aspects of diseases together with their symptoms and the knowledge of their cure and its means.”<sup>8</sup> Again, quoting the verses, *The sun and the moon move according to a fixed reckoning,*<sup>9</sup> and *He ordained stages for the moon so that you might learn the method of calculating years and determine time...*,<sup>10</sup> he says that “the real meaning of the movements of the sun and the moon according to a fixed reckoning and of the eclipse of both, and of the merging of the night into the day and the day into the night, can only be known by the one who knows the knowledge of the composition of the heavens and the earth, the science of astronomy.”<sup>11</sup>

But perhaps more telling of Ghazālī’s attitude toward natural sciences and his understanding of the integration of all knowledge is a short passage in the same work which ought to be quoted in full:

Likewise, the complete meaning of God’s words, *O insān, what has deceived you concerning your Gracious Lord, Who created you, then perfected you, then proportioned you aright? He fashioned you in whatever form He pleased*, can only be known to him who knows the science of anatomy of human limbs and internal organs, their number, their kinds, their underlying wisdom and their uses. God indicated these in many places in the Qur’ān, and [knowledge of] these belongs to the sciences of the ancients and the moderns (*‘ulūm al-awwālīn wa ‘ulūm al-ākharīn*); [in fact] in the Qur’ān lies the confluence of the sciences of the ancients and the moderns. In the same way, the complete meaning of God’s words, *I perfected his [i.e. Adam’s] shape and breathed My spirit into him*, cannot be understood so long as [the knowledge about the] perfection of shape, breath and spirit are not known. There are such obscure sciences behind these that most people are heedless to them; sometimes they even fail to understand these sciences when they hear from the one who knows them.

Al-Ghazālī goes on to state,

Should I go on narrating the details of divine works to which the verses of the Qur’ān point, it would take a long time. Only an indication of their confluence is possible [here], and we have done this where we have mentioned that knowledge of divine works is among the sum total of knowledge of God (may He be exalted). That sum total includes these details. Likewise, every division we have briefly described will, if further divided, branch off into many details. Reflect, then, on the Qur’ān and seek its wonderful meanings, so that per chance ye may encounter in it the confluence of the sciences of the ancients and the moderns in their totality and the reflection on the Qur’ān is intended only for reaching from the brief description of these sciences to their detailed knowledge which is [like] an ocean that has no shore.<sup>12</sup>

For our discussion of Islam and science nexus, the most important work of al-Ghazālī is his *Incoherence of the Philosophers (Tahāfut al-falāsifa)*, which “marks a turning point in the intellectual history of medieval Islam.”<sup>13</sup> In this work of enduring interest, al-Ghazālī refuted twenty philosophical doctrines which were considered to be essential features of the Islamic neo-Platonism so painstakingly and thoroughly perfected by al-Fārābī and Ibn Sīnā who became the main targets of al-Ghazālī’s attack. In particular, three propositions were singled out by al-Ghazālī as particularly running against the faith tradition to which both he and the philosophers he condemned belonged. Note that the question here was not the faith of individual

7. Q. 26:80.

8. *Jawāhir*, p. 46.

9. Q. 55:5.

10. Q. 10:5.

11. *Jawāhir*, p. 47.

12. *Jawāhir*, p. 47-48. The Qur’ānic verses, italicized in the quotation, are in order of citation: Q. 82:6-8 and Q. 32:9.

13. See the parallel English-Arabic edition of *Tahāfut al-falāsifa* [hereafter *Tahāfut*], translated, introduced and annotated by Michael E. Marmura (2000), Brigham Young University Press, Provo, Utah, p. xv. Another translation, now out of print, was published by Sabih Ahmad Kamal (1963), Pakistan Philosophical Congress.

philosophers. In fact, it was generally accepted that their entire philosophical system was directed toward an affirmation of the existence of God, as opposed to some Hellenistic philosophers and furthermore, they tried to establish their system of thought in a manner as to affirm the uniqueness of one and only one God. The problem, as al-Ghazālī saw it, was that their doctrines *forced* God to produce the world by necessity through a process of emanation, in more or less the same manner in which an inanimate object like the sun was said to produce its light by its very nature, by its essence, necessarily. Thus he found the three propositions—the eternity of the world, God’s knowledge of universals only, and the denial of the resurrection of the body—particularly offensive because they reduced God’s omnipotence and denied the divine attributes of Will, Power, and Knowledge. *Tahāfut* achieved its high rank in the history of Islamic tradition because it was the first sustained, well-argued and thorough critique of the emanative metaphysics, causal theory and psychology of Ibn Sīnā which was built on a cohesive internal structure and which, in spite of its professed religious and theological aims, was ultimately philosophical.

Written between 484/1091 and 489/1095, when al-Ghazālī was at the prestigious Nizzāmiyya Madrasa in Baghdad, along with three other closely related works,<sup>14</sup> *Tahāfut* is divided into two parts. The first part, consisting of sixteen metaphysical questions, covers natural sciences. Two out of three most condemned propositions—the pre-eternity of the world and the theory that God knows only the universals—are covered in this part; the third doctrine in this category (Ibn Sīnā’s denial of a bodily resurrection) is refuted in the second part, in the eighteenth through twentieth discussion, the most focused and thorough refutation being in the twentieth discussion. These twenty propositions are listed by al-Ghazālī in the following order:

- (i) The refutation of their belief in the eternity of the world.
- (ii) The refutation of their belief in the everlasting nature of the world.
- (iii) Their dishonest assertion that God is the Creator of the world, and that the world is His product.
- (iv) Demonstration of their inability to affirm the Creator.
- (v) Demonstration of their inability to prove the impossibility of two gods by a rational argument.
- (vi) Refutation of their denial of the Divine attributes.
- (vii) Refutation of their theory that the Divine being is not divisible into genus and differentia.
- (viii) Refutation of their theory that the First (Principle) is a simple unqualified being.
- (ix) Demonstration of their inability to show that the First (Principle) is not body.
- (x) The thesis that they are bound to affirm the eternity of the world, and deny the Creator.
- (xi) Demonstration of their inability to maintain that the First (Principle) knows anyone other than Himself.
- (xii) Demonstration of their inability to maintain that He knows Himself.
- (xiii) Refutation of their doctrine that the First (Principle) does not know the particulars.
- (xiv) Refutation of their doctrine that the Heaven is a living being whose movements are voluntary.

---

14. The first of these three is *Maqāsid al-falāsifa* (*The Aims of the Philosophers*), written, according to al-Ghazālī, as a prelude to his refutation of these aims in *Tahāfut*, though in the latter work, there is no reference to it; the second work, *Mi’yār al-‘ilm* (*The Standard for Knowledge*), which is a critique of Ibn Sīnā’s *Logic*, which for him was a philosophically neutral tool; this work was to serve as an appendix to *Tahāfut*; the third work was *Al-iqtisād fī l-‘itiqād* (*Moderation in belief*), a kind of sequel to *Tahāfut*.

- (xv) Refutation of their theory of the purpose of the Heaven's movement.
- (xvi) Refutation of their doctrine that the souls of the heavens know all the particulars.
- (xvii) Refutation of their belief in the impossibility of a departure from the natural course of events.
- (xviii) Refutation of their theory that the soul of man is a substance which exists in itself, and which is neither body nor an accident.
- (xix) Refutation of their belief in the impossibility of the annihilation of the human souls.
- (xx) Refutation of their denial of the resurrection of bodies, which will be followed by feelings of pleasure and pain produced by physical causes of these feelings in Paradise and Hell.

The refutation of the first proposition, “the eternity of the world” takes up the bulk of the *Tahāfut*. Central to the debate is the question of divine causality in the sense of God’s operative principle: Does God act by the necessity of His nature or voluntarily? For al-Ghazālī, the doctrine of an eternal world means the denial of the divine attribute of will, putting an arbitrary limitation on God’s absolute power. It is interesting to note that before refuting their claims, al-Ghazālī had to expound the doctrines of the philosophers and he did it in his own crystal clear manner of exposition that made it accessible even to non-philosophers. In the introduction, after the “Preface”, al-Ghazālī clearly states that he is not going to plunge into narrating the differences between the philosophers because that would involve too long a tale, but he would restrict his discussion to showing the contradictions of their leader, “who is the philosopher par excellence and ‘the first teacher’...namely Aristotle and [his] most reliable transmitters and verifier among the philosophers in Islam, al-Fārābī Abū Naṣr and Ibn Sīnā.”<sup>15</sup>

Having explained the boundaries of his work, al-Ghazālī states that in spite of many disagreements among the philosophers on the question of the past eternity (*qadam al-‘ālam*) of the world, a great majority of them uphold its past eternity, “that is [to say], it [the world] has never ceased to exist with God, exalted be He, to be an effect of His, to exist along with Him, not being posterior to Him in time, in the way the effect coexists along with the cause and light along with the sun; that the Creator’s priority to [the world] is like the priority of the cause to the effect, which is a priority in essence and rank, not in time.”<sup>16</sup> He then goes on to explain the Platonic view, which held that the world was created in time,<sup>17</sup> and finally the view of Galen who suspended judgment on this issue.

In his rebuttal of the eternity thesis, al-Ghazālī first cites the claims of the philosophers and refutes them one by one: “They say, ‘it is absolutely impossible for a temporal to proceed from an eternal.’” His exposition of this position is thorough: If we suppose the Eternal at a stage when the world had not yet originated from Him, then the reason why it had not originated must have been that there was no determinant for its existence, and that the existence of the world was only a possibility. So, when later the world comes into existence, we must choose one of the two alternatives to explain it: (i) either that the determinant has emerged or (ii) that it has not. If the determinant did not emerge, the world should still remain in the state of mere possibility, in which it was before. But if it has emerged, who is the originator of the determinant itself? And why does it come into being now, and did not do so before? Thus, the question regarding the origin of the determinant remains unanswered. But since all the states of the Eternal are alike, either nothing shall originate from Him, or whatever originates shall continue to originate forever.

---

15. *Tahāfut*, p. 4.

16. *Tahāfut*, p. 12.

17. “But, then, some among [the philosophers] have interpreted his language as metaphor, refusing [to maintain] that the world’s temporal origination is a belief of his.” *Tahāfut*, p. 12.

Why did He not originate the world before its origination? It is not possible to answer this by saying that this is because of His inability to bring the world into existence, nor could one say that this is because of the impossibility of the world's coming into being. For this would mean that He changed from inability to power, or that the world changed from impossibility to possibility. And both senses are absurd. Nor can it be said that, before the time of the origination of the world, there was no purpose and that a purpose emerged later. Nor is it possible to ascribe (the non-origination of the world before it actually originated) to the lack of means at one stage, and to its existence at another. The nearest thing to imagine is to say that He had not *willed* the world's existence before. But from this it follows that one must also say that the world is the result of His having become willing to will its existence, after having not willed so. This would mean that the will should have had a beginning in time. But the origination of the will in the Divine Being is impossible; for He is not subject to temporal events, and its creation—not through or by Him—would not make Him a Willer.

But even if we leave the question concerning the substratum in which the will originated, al-Ghazālī argued, the difficulty regarding the very act of origination still stands. Whence does the will originate? And why does it originate now and not before? Does it now originate from a source other than God? If there can be a temporal existent which has not been brought into existence by anyone, then the world itself should be such an existent, so as to be independent of the Creator. For what is the difference between one temporal existent and another?

So, if the origin of the world is ascribed to God's action, the question remains: Why now, and why not before? Was it due to the absence of means, or power, or purpose, or nature? If so, the transition from this stage to that of existence will revive the difficulty we had to face at the outset. And if it is said to have been due to the absence of will, then one act of will will stand in need of another, and so on ad infinitum. From this it is absolutely clear that the procession of the temporal from the eternal is impossible, unless there were a change in the eternal in respect of power, or means, or time, or nature. And it is impossible to suppose a change in the state of the eternal. For as a temporal event, that change would be like any other change (in non-eternal beings). Therefore (in case of the eternal), change of any kind whatsoever is impossible. And now that the world has been proved (always) to have existed, and the impossibility of its beginning in time has been shown, it follows that the world is eternal.

Before refuting their doctrine, al-Ghazālī acknowledges, “this, then, is the most imaginative of their proofs. In general, their discussion in the rest of the metaphysical questions is weaker than their discussion in this, since here they are able to [indulge in] various types of imaginings they are unable to pursue in other [questions]. For this reason we have given priority to this question, presenting first the strongest of their proofs.” He then presents two objections to their proof: “How will you disprove the one who says that the world came into being because of the eternal will which demanded its existence at the time at which it actually came into existence, and which demanded the non-existence (of the world) to last as long as it lasted, and (demanded) the existence to begin where it actually began? So, on this view, existence of the world was not an object of the eternal will, before the world actually existed; hence its non-actualization. And it was an object of the will at the time when it actualized. What can prevent us from believing such a thing, and what is the contradiction involved in it?”<sup>18</sup>

Al-Ghazālī then advances a mathematical argument against the Neo-Platonic assertion of the eternity of the world.<sup>19</sup> He states that the past eternity of the world logically entails that an

---

18. *Tahāfut*, pp. 14, 15.

19. The impossibility of an infinite number of revolutions of the different planets is not found in Philoponus in this connection, as asserted by Fakhry (1983) in his *A History of Islamic Philosophy*, 2<sup>nd</sup> ed. Columbia University Press, New York, p. 224, n. 40, cf. Averroes' *Tahāfut al-Tahāfut*, II, 7 where the note on page 7 merely states that it *derives* from him [that is, from Philoponus] but is not found in his works in this connection; even in his lost refutation of Aristotle's doctrine of the eternity of the world, where “it is given as a quotation from him by Simplicius in his commentary on the *Physica* (Diels, 1179, 15-27). Philoponus says in his first argument that if the

infinite number of revolutions of the heavens has already elapsed which is impossible because there exists a finite ratio between the revolutions of the sun and the other spheres. This is based on the fact that the sphere of the sun rotates in one year, whereas Saturn's rotates in thirty so that the rotations of Saturn are a third of a tenth of those of the sun. The rotations of Jupiter are a half of a sixth of the rotations of the sun for it rotates once in every twelve years. Now, according to their assertion, if the number of the rotations of Saturn is infinite, the number of the solar rotations, although a third of a tenth [of the latter], will [also] be infinite. Indeed, the rotations of the sphere of the fixed stars, which rotates [once in] every thirty-six thousand years, will also be infinite, just as the sun's movement from east to west, taking place in a day and a night, will be [likewise] infinite and this is a clear impossibility. Moreover, these revolutions are either even or odd and hence must be finite. For the infinite is neither odd nor even, since it can be increased indefinitely. To top it all, the Neo-Platonists assert the possibility of an infinite number of Souls, existing in a disembodied condition, as Ibn Sīnā held, despite the logical contradiction that the concept of an actual infinite involves.

Al-Ghazālī also refuted Ibn Sīnā's assertion that God is prior to the world in essence, rather than in time, by showing the creation of time. The statement that God is prior to the world, he said, merely means that God existed while the world was not, and continued to exist together with the world after its creation. Likewise, al-Ghazālī showed that the proposition of post-eternity was merely a logical offshoot of the proposition of pre-eternity.

He then moves on to the question of God's attributes (questions 3-11). According to the Neo-Platonists, the world emanates from God—whom they liked to call the First—*necessarily* just as the effect emanates from the cause or the light from the sun. Al-Ghazālī returns to the philosophers' assertion that the world is eternal and asks how could it be said that it is created by God for creation or making means the act of bringing forth an entity out of nothing, and the eternal is forever in being. Moreover, the Neo-Platonists claim that out of one only one can come, but since God is one and the world multiple, there can be no sense in saying that He is its Maker. In his treatment of question four, al-Ghazālī shows that according to Neo-Platonists' own logic, they cannot even prove the existence of God because all their arguments rest on the impossibility of an infinite regress and necessity of ultimately positing an Uncaused Cause. However, bodies are eternal, according to them, and hence require no cause and an infinite series is not impossible since it follows from their thesis of the eternity of the world that an infinite series of effects has already come and gone.

At the end of his critique of the four proofs of the philosophers, al-Ghazālī states that the *Tahāfut* is intended only to refute their claims and “as regards the true doctrine, we will write a book concerning it after completing this one—if success, God willing, comes to our aid—and will name it *Qawā'id al-ʿaqā'id* (*The Principles of Beliefs*). We will engage in it in affirmation, just as we have devoted ourselves in this book to destruction.”<sup>20</sup> There is, in fact, a book by that title in the *Iḥyā'*. But, as noted by Michael Marmura, the work that best qualifies as a sequel to *Tahāfut* is *al-iqtisād fī'l-ʿiṭiqād*.

This brings us to al-Ghazālī's refutation of causality, most coherently formulated in Part Two of the *Tahāfut*, where it starts with a preamble that states, “Regarding what are called ‘natural sciences’, these consist of many sciences, whose divisions we will [now] mention so that it would be known that the religious law does not require disputing them nor denying them, except in places we will mention.”<sup>21</sup> Then he goes on to give details of his eight-fold division of the roots of natural sciences. Having done so, he states “the connection (*al-iqtirān*) between what is habitually (*fī'l-ʿāda*) believed to be a cause (*sababba*) and what is habitually believed to be an effect (*musabba*)

---

world were eternal, there would be not an infinite number of men, but also of horses and dogs; infinity therefore would be triplicated, which is absurd, because nothing can be greater than infinity.” *Averroes's Tahafut al-Tahafut (The Incoherence of the Incoherence)*, tr. by Simon Van Den Bergh (1954), Luzac & Co., Oxford, vol. ii, p. 7.

20. *Tahāfut*, p. 46.

21. *Tahāfut*, p. 161.

is not necessary (*laysa ʿdaruriyyan*).” He, then, provides a list of pairs that are usually thought to be cause and effect by the philosophers (quenching of thirst and drinking, satiety and eating, burning and contact with fire...). And then states that “their connection is due to the prior decree of God, who creates them side by side (*ʿalā al-tasāwūq*),<sup>22</sup> not to its being necessary in itself, incapable of separation. On the contrary, it is within [divine] power to create satiety without eating, to create death without decapitation, to continue life after decapitation, and so on to all connected things. The philosophers denied the possibility of [this] and claimed it to be impossible.”<sup>23</sup>

This criticism of the philosophers’ position is on the basis that their proof of causality was dependent on observation (*mushāhada*), which depends on the senses—a source of knowledge that he could not accept on its own merit. Thus his position regarding causality is consistent with his theory of knowledge. Using the example of fire and burning, he said that observation could only prove that burning took place when there was fire, and not *by* the fire or the fact that there was no other cause [for burning]. Thus he establishes that something’s existence *with* a thing does not prove that it exists *by* that thing. He then shows that the inert and lifeless objects such as fire are incapable of action and thus cannot be the agent (*al-fāʿil*) that causes burning. To prove his point, al-Ghazālī used several examples and employed a neo-platonic device of the philosophers some of whom held that accidents (*ʿarāḍ*, sing. *ʿarḍ*) and incidents (*ḥawādith*) emanate at the time of contact between “bodies”, from the provider of forms (*wāhib al-ṣūwār*), whom they thought to be an angel. Accordingly, one cannot claim that fire is the agent of burning:

Indeed, we will show this by an example. If a person, blind from birth, who has a film on his eyes and who has never heard from people the difference between night and day, were to have the film cleared from his eyes in daytime, [then] open his eyelids and see colors, [such a person] would believe that the agents [causing] the apprehension of the forms of the colors in his eyes is the opening of his sight and that, as long as his sight is sound, [his eyes] opened, the film removed, and the individual in front of him having color, it follows necessarily that he would see, it being incomprehensible that he would not see. When, however, the sun sets and the atmosphere becomes dark, he would then know that it is sunlight that is the cause for the imprinting of the colors in his sight.<sup>24</sup>

Al-Ghazālī reduced the problem of causality to that of “will” which makes it rationally possible for the agent, whom he held to be the Creator Himself, not to create burning even though there is contact. This makes room for the existence of miracles (*muʿjizāt*) that were associated with the prophets, without resorting to allegorical interpretations of the Qurʾānic verses as the philosophers did. He gives the example of the Qurʾānic account of Abraham’s ordeal when he was thrown in the fire but no burning took place. The Qurʾān (21:69) states clearly that it was Allāh’s Will that the fire did not harm Abraham and al-Ghazālī maintained that Allāh is the agent (*fāʿil*) of every action, either directly or indirectly (that is through the angels).

His short work, *al-Maqṣad al-asnā fī Sharah asmāʾ Allāh al-ḥusnā* (*The Highest Aim in the Commentary on the Beautiful Names of God*),<sup>25</sup> written approximately at the same time as *Ihyāʾ*, is one of the best representative works in the traditional Islamic reflection on metaphysical and cosmological meanings of God’s beautiful names (*al-asmāʾ al-ḥusnāʾ*). In a passage describing the three names of God—*Al-Khāliq*, *Al-Bārī*, *Al-Muṣawwir*—al-Ghazālī states that “everything which comes forth from non-existence to existence needs first of all to be planned; secondly, to be

22. “Side by side” or “one alongside the other” but not “one following the other” and not “in a successive order.” What al-Ghazālī means is concomitance, where the priority is not temporal. His critique is of Ibn Sīnā’s concept of essential cause, where cause and effect are simultaneous. *Tahāfut*, p. 240, n. 3.

23. *Tahāfut*, p. 166.

24. *Tahāfut*, p. 168.

25. This work has been translated into many languages. A more recent English translation is by David B. Burrell and Nazih Daher, *The Islamic Texts Society*, Cambridge, 1992, reprint 1999; all references are to this edition; [henceforth *Maqṣad*].

originated according to the plan; and thirdly, to be formed after being originated.”<sup>26</sup> These operative functions are signified by the aforementioned three names.

Al-Ghazālī remains enormously important for the contemporary science-religion discourse but his continuous relevance does not rest on his position on a particular issue; rather it rests on his general approach to some of the fundamental questions now being debated in regard to the cosmos, the human condition and God’s role in the world. His personal journey, his formal training in many branches of learning and, most of all, his clear insight into the nature of the human condition together with an accessible prose contribute to the contemporary interest in his works. Furthermore, in the vivid account of his personal experience of a spiritual transformation that made him what he was, one discovers many strands of a universal nature. By making his intellectual and spiritual journey accessible to subsequent generations through an inspiring and lucid account, he has not only drawn numerous seekers into the folds of his intensely personal experience, but has also provided a matrix for sharing such experiences within the larger body of literature dealing with spiritual transformations. This, together with his works written after the transforming experience, gives a significantly unique dimension to his contribution on such contemporary issues as the nature of God’s action in the universe, the reality of miracles, the question of good and evil, suffering, hope and salvation. In addition, his ideas on many fundamental questions which are being debated in disciplines such as cosmology and eschatology deserve to be seriously studied because, although he remains thoroughly rooted in the Islamic tradition, the treatment he imparts to his subject matter raises it to a level that is accessible from all faith traditions.

---

26. *Maqṣad*, p. 68.