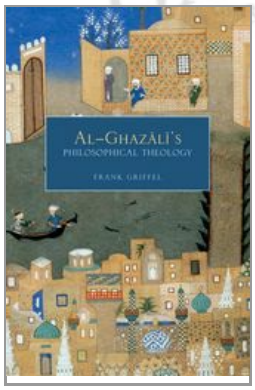
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Al-Ghazali's Philosophical Theology
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Knowledge of Causal Connection Is Necessary

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[–] Abstract and Keywords

The seventeenth discussion of al-Ghazali's *Incoherence* (*Tahafut*) shows that he remains uncommitted as to whether God creates events in the world in an occasionalist way or by means of secondary causality. Al-Ghazali assumes that neither revelation nor a study of the world allows us to settle the dispute between the occasionalists and those who propose secondary causality. If that is the case, what about the prophetical miracle? For occasionalists it is a break in God's habit and thus would prove that there is no secondary causality. A close study of al-Ghazali's teachings on prophecy reveals that he no longer shares the Ash'arite teaching that prophecy is confirmed and proven by the prophets' performance of miracles. He thinks these miracles are indistinguishable from sorcery and magic and can be explained as the effects of natural causes that are yet unknown to us. According to al-Ghazali, God does not break his habit. In the Qur'an (Q 33:62, 48:23) God declares: "You will not find any change in God's habit." This implies that God's habits – meaning the laws of nature – are unchanging and stable and that they will not be

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suspended. The lawful character of God's arrangement of the world, however, is not something that we find in the world itself. Al-Ghazali still thinks that occasionalism is a viable explanation of God's creative activity. The cause may not have any true efficacy on its effect. In the human understanding, however, the cause has such efficacy. God created our minds in a way that they always search for causes and look out for the rules that determine how things react to one another. While al-Ghazali remains uncommitted if what we consider a cause is truly connected with what we consider its effect, he acknowledges that the human mind considers there is a connection which will never change.

Keywords: agnosticism, causal connections, nominalism, future events, conditions of prophecy, prophetical miracles, magic, sorcery, logic, ontology

In the seventeenth discussion of the *Incoherence*, is there a consistent line of argument with regard to causality? After proposing his most radical epistemological criticism in the First Position—that sense perception does not lead to necessary judgments—al-Ghazālī presents in the Second and the Third Positions two alternatives to the Avicennan model of metaphysics and physics. In the First Approach of the Second Position, occasionalism is contrasted with the deterministic cosmology of his opponents. Al-Ghazālī aims to show that a congruent occasionalist model can be a viable alternative to Avicennan metaphysics. He implicitly claims that the *falāsifa* can accept this model and still continue to pursue the natural sciences. The "laws of nature" that, according to the *falāsifa,* govern God's creation may be understood as habitual courses of action subject to suspension, at least in principle. Our human experience, however, has shown us that God does not frivolously break His habit. This insight allows us to equate God's habit with the laws of nature, for all practical purposes. In the natural sciences, we study God's actions and reformulate their habitual course into laws that we justifiably consider, if not necessary, at least stable, unchanging, and permanent.

In the Third Position, al-Ghazālī puts up a far less radical alternative to Avicennan metaphysics and natural sciences. Although not clearly explicated, this theory appears to be a slightly altered version of Aristotelian physics. This physical theory postulates that in addition to the rules of logic, God cannot violate laws of nature that rely on the relationships of implications. Such implications are usually formulated in definitions. Will is defined as existing in a being that has knowledge, for instance, and knowledge is defined as existing in a being that has life. God therefore cannot create will in a being that **(p.176)** is lifeless. Equally, God cannot "change the genera" (*qalb al-ajnās*), meaning that He cannot transform a material body into an immaterial being and vice versa. Al-Ghazālī was certainly aware that these three conditions limit God's omnipotence significantly. He here lists what can be viewed as the unchangeable essence of God's creation. And although the laws of nature from among this core group cannot be altered once creation unfolds, God reserves the power to alter others of His habits, such as making water flow uphill or creating life in any given material object, such as a stick.

These two alternative theories to Avicenna's cosmology frame a passage of roughly two pages, which, to the Avicennan, forms the most persuasive part of the seventeenth

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discussion. In addition to these two alternative cosmological theories (alternative to Avicenna's cosmology), al-Ghazālī defends a slightly modified Avicennan explanation of causal connections in the Second Approach of the Second Position. Here, al-Ghazālī is willing to accept that chains of secondary causes connect every event in creation with the creative activity of the creator. In this part of the seventeenth discussion he clearly accepts the existence of "natures" (*ṭabā'i'*). He requires the Avicennan simply to acknowledge that we lack exhaustive knowledge of the full possibilities of these natures. They might allow causal connections that we have not yet witnessed. The miracles reported in revelation have causes unknown to us. They are not true miracles but mere marvels.

In the *Incoherence,* al-Ghazālī presents what might be called a nominalist criticism of the modalities, in some sense a criticism of human judgments as a whole. Using the parlance of Avicenna, al-Ghazālī implicitly asks whether we can know that any given object that we witness in the outside world is possible by itself (*mumkin bi-dhātihi*) and at the same time is necessitated by something else (*wājib bi-ghayrihi*). Al-Ghazālī rejects Avicenna's assumption that modalities exist in the outside world. This rejection goes to the heart of the Avicennan ontology that regards potentiality as a paradigm that strives to actualize itself. Like Avicenna, al-Ghazālī views human knowledge as a conglomerate of judgments.[1] He agrees with Avicenna that true knowledge is congruent to the outside world and describes it as such. For Avicenna, however, there can be only one true explanation of any given phenomenon in the world. True human knowledge describes the necessary and only way the world is constructed. Demonstration (*burhān*) is the best means to achieve such correct knowledge about the world. Where demonstration is not available, humans choose less perfect means of acquiring knowledge. Al-Ghazālī agrees with Avicenna on the imperfect nature of these means. He realizes, however, that where demonstration cannot be achieved, multiple explanations are compossible, that is one explanation may coexist with another without needing to decide which applies. The inability to demonstrate the unchanging nature of the connection between cause and effect creates a situation in which more than one explanation of causal connections is viable. Only a nominalist position toward human knowledge allows the assumption of two different explanations of a given process as compossible.

Al-Ghazālī's nominalist critique of Avicenna is an important element in the understanding of his cosmology. We must point out that al-Ghazālī was not **(p.177)** a nominalist in the sense of his contemporary Roscelin (d. *c.* 1120) or William of Ockham (d. 1347) in the Latin West.[2] These nominalists outspokenly denied any ontological coherence between things and their formal (and universal) representations in our minds. In the Latin dispute about the status of universals—a dispute that lasted from the late thirteenth to the end of the fourteenth centuries—the nominalist criticism was directed against the Aristotelian claim of an eternal and invariant formal level of being that shapes both the individual things in the outside world as well as our knowledge of them. This position, which is known as epistemological realism, essentially maintains that individual things are what they are because of real existing universals. The consistency of our knowledge with the outside world is due to the ontological coherence between the two. Human souls have

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access to these universals, and their apprehension constitutes our knowledge. In the Latin West, Avicenna was one of the most important proponents of the realist position.

In the Muslim East, the parameters of the dispute on the status of universals were different. Here, the nominalist criticism of Avicenna developed from Ashʿarite occasionalism, as in the case of al-Ghazālī. Yet nominalist positions were not unknown within the discourse of *falsafa* in the East. Justifying his position that the modalities exist only in minds and not in the outside world, al-Ghazālī cites a moderate nominalist view toward human knowledge that were current among the *falāsifa*. He tries to persuade his philosophical readers to accept his position on the modalities by comparing them to universals. According to views held by the *falāsifa* themselves, al-Ghazālī continues, the universals are just concepts in the mind without referring objects (*maʿlūmāt*) in the outside world. The universals do not exist in the outside world:

> What exists in the outside world (*fī l-aʿyān*) are individual particulars that we perceive with our senses and not in our mind. But they are (only) the cause; because the mind abstracts from them intellectual judgments that are empty of matter. Therefore being a color (*lawniyya*) is a single judgment (*qaḍiya*) in the mind (*ʿaql*) similar to blackness or whiteness. One cannot conceive that there exists a color that is neither black nor white nor any other of the colors. In the mind there exists the form of "being a color" without any details; and one says it is a form and it exists in the minds and not in the outside world.[3]

The position referred to here needs not be that of a nominalist. Avicenna himself taught that the perception of individual objects cannot lead to universal judgments.[4] Although admitting that universals have no existence in matter, the Avicennan opponent still holds that they exist in a real and immaterial way in the active intellect, outside of the human mind. Al-Ghazālī uses this argument, however, to advance a distinctly nominalist critique of the position that modalities exist outside of the human mind. We will later see how al-Ghazālī made productive use of some nominalist tendencies within Avicenna's œuvre.[5]

In the methodological introduction to *The Highest Goal in Explaining the Beautiful Names of God,* al-Ghazālī develops a distinctly nominalist theory of **(p.178)** semantic relations that combines Ashʿarite notions with philosophical distinctions.[6] It is also apparent, however, that the influence of Avicenna's realist epistemology on him was so strong that he often applies to his own writings a realist concept of the universals.[7] What distinguishes al-Ghazālī from Avicenna, as we will see in the course of this study, is that he remained ontologically uncommitted to the existence of the universals outside of individual human minds. Although the universals may exist as entities in the active intellect, such an existence cannot be demonstrated. The realist understanding of the universals may or may not be true. In the Second Approach of the seventeenth discussion, he counters the realist position with the occasionalist position that human cognitions are the immediate creations of God and are only congruent with the outside world if God wills it.

Some of al-Ghazālī's criticism in his *Incoherence of the Philosophers* centers on

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questioning the ontological connection between the formal structure of the world and the formal structure of our knowledge. Averroes (d. 595/1198), for instance, who shared Avicenna's realist epistemology, was surprised by al-Ghazālī's effort to defend an occasionalist position with the argument that human knowledge may become disconnected from the world it aims to describe. That cannot be the case, Averroes says, "because the knowledge created in us is always in conformity with the nature of the real thing, since the definition of truth is that a thing is believed to be such as it is in reality."[8] Yet this conformity (*taba'*) is precisely what al-Ghazālī argues against. Since there is no proof of the necessity of the connection between a cause and its effect, there is also no proof of the necessary conformity of our knowledge with the world. The mere possibility of a disconnect between the two proves that there is no formal—and thus necessary—coherence between the world and our knowledge of it.

In a later passage of the *Incoherence*, al-Ghazālī comments on what he does in the seventeenth discussion. This comment appears in the twentieth discussion of the book, on the subject of corporeal resurrection in the afterlife. The *falāsifa* argue that a resurrection of bodies is impossible, as it necessitates the impossible feat of transformation of substances, such as iron transforming into a garment. In his response, al-Ghazālī refers his readers back to the Second Approach of the Second Position in the seventeenth discussion, in which he claims to have already discussed this problem. He argues that the unusually rapid recycling of the matter of the piece of iron into a piece of garment is not impossible. In the Second Approach of the Second Position, al-Ghazālī had argued that the matter that makes up a piece a wood may change in other than its known and usual way from a stick into a serpent. "But this is not the point at issue here," al-Ghazālī continues; the real question is whether such a transformation "occurs purely through [divine] power without an intermediary, or through one of the causes."[9] The question cannot be put more bluntly: does God create such transformations mono-causally—in accord with an occasionalist worldview—or by means of secondary causality?

> Both these two views are possible for us (*kilāhumā mumkinān 'indanā*) (…) [In the seventeenth discussion we stated] that the **(p.179)** connection of connected things in existence is not by way of necessity but through habitual events, which can be disrupted. Thus, these events come about through the power of God without the existence of their causes. The second [view] is that we say: This is due to causes, but it is not a condition that the cause [here] would be one that is well-known (*ma'hūd*). Rather, in the treasury of things that are enacted by [God's] power there are wondrous and strange things, one hasn't come across. These are denied by someone who thinks that only those things exists that he experiences similar to people who deny magic, sorcery, the talismanic arts, [prophetic] miracles, and the wondrous deeds [done by saints].[10]

The solution al-Ghazālī chose in the seventeenth discussion of his *Incoherence* is thorough and well reasoned, and we will discuss many of its implications in this chapter. One realizes how carefully al-Ghazālī had crafted and considered this position when one sees that al-Ghazālī maintained this position throughout all his later works. All through his

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life al-Ghazālī remained ultimately undecided as to whether God creates mono-causally and arranges directly in each moment all elements of His creation, or whether God mediates His creative activity by means of secondary causes. Al-Ghazālī accepted both explanations as viable explanations of cosmology.

The Dispute over al-Ghazālī's Cosmology

In a 1988 article, Binjamin Abrahamov attempted to determine al-Ghazālī's position on causality in works written after the *Incoherence of the Philosophers*. Given that the *Incoherence* is a work of refutation in which the author himself admits that his arguments may not represent his real opinion,[11] Abrahamov assessed al-Ghazālī's teachings from works considered closer to his actual teachings. These works include *The Revival of the Religious Sciences*, *The Book of the Forty*, and al-Ghazālī's commentary on the Ninety-Nine Noble Names. Abrahamov concluded that in these three works, al-Ghazālī uses language that assumes that causes *do* have efficacy on other things. To be sure, it is God who creates the causes and maintains and regulates their influences. Yet in these works, al-Ghazālī suggests that the influence of causes is indeed real and not just an illusion. Once put into place, the causes lead to effects that are themselves desired by God. Abrahamov also noted that in a fourth work of al-Ghazālī, *The Balanced Book on What-To-Believe*, the author uses language that is distinctly occasionalist. Here he maintains that God should be regarded as the immediate creator of each individual event and that if He so wished, He could break His habitual patterns of creation and suspend what we postulate as the laws that govern creation. Given that those works implying a causal theory were written after *The Balanced Book,* Abrahamov suggests that al-Ghazālī changed his mind "but preferred to conceal his true opinion by contradicting himself."[12] In this analysis, Abrahamov follows Leo Strauss in his exegesis of Maimonides **(p.180)** (d. 601/1204). Strauss claimed that when medieval authors such as Maimonides use "conscious and intentional contradictions, hidden from the vulgar," they wished to compel their readers "to take pains to find out the actual meaning," which was often the one that appears least frequently in their writings.[13]

The apparent contradiction observed by Abrahamov had been earlier noted by W. H. T. Gairdner in a 1914 article. Gairdner observed that whereas in some of his works, al-Ghazālī explains God's creative activity by means of secondary causality, creation mediated by other created beings, in other works, he employs explanations that are distinctly occasionalist. Gairdner suggested that al-Ghazālī had published two different sets of teachings, one in works written for the ordinary people (*ʿawāmm*) and a different set of teachings in works that were written for an intellectual elite (*khawāṣṣ*). Whether al-Ghazālī considered these two teachings to be equally true was for Gairdner the "Ghazālī problem."[14] Gairdner supported his view with quotations from Ibn Ṭufayl (d. 581/1185–86) and Averroes, claiming that they had been bothered by the very same problem. Gairdner's article encouraged the widespread assumption in twentieth-century research that in works such as *The Niche of Lights,* al-Ghazālī taught an "esoteric" theology, while in works such as his autobiography or *The Balanced Book,* he accommodated his teachings to the expectation of the target audience and taught occasionalism.[15]

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In 1992, Richard M. Frank presented the most thorough study of al-Ghazālī's cosmology to date.[16] Like Abrahamov, Frank bases the bulk of his analysis on the works *The Highest Goal in Explaining the Beautiful Names of God*, *The Book of Forty*, and several books of the *Revival*. Frank also includes *The Niche of Lights*, *Restraining the Ordinary People from the Science of Kalām*, and *The Balanced Book on What-to-Believe,* and was thus able to cover almost the whole Ghazalian corpus. Frank claims that contrary to common opinion, al-Ghazālī teaches (1) that the universe is a closed, deterministic system of secondary causes whose operation is governed by the first created being, an "angel" (or "intellect") associated with the outermost sphere; (2) that God cannot intervene in the operation of secondary causes, celestial or sublunary; and (3) that it is impossible that God has willed to create a universe in any respect different from this one He has created.[17] God governs the universe through intermediaries, and He cannot disrupt the operation of these secondary causes. Frank concluded that whereas al-Ghazālī rejected the emanationism of al-Fārābī and Avicenna, for instance, his own cosmology is almost identical to that of Avicenna. Earlier contributions to the academic debate, Frank points out, had already established that al-Ghazālī accepted some of Avicenna's teachings while rejecting others: "What we have seen on a closer examination of what [al-Ghazālī] has to say concerning God's relation to the cosmos as its creator, however, reveals that from a theological standpoint most of the theses which he rejected are relatively tame and inconsequential compared to some of those in which he follows the philosopher."[18]

Unlike Gairdner or Abrahamov, Frank does not propose that al-Ghazālī presents two different kinds of teachings in different works. He rejects the division of al-Ghazālī's works into esoteric and exoteric.[19] Al-Ghazālī's views **(p.181)** on causality in *The Balanced Book on What-to-Believe*, for instance, do not differ from those in his commentary on God's Ninety-Nine Noble Names or in *The Niche of Lights*. Frank implicitly acknowledges that al-Ghazālī used both causalist and occasionalist language in his works. The contradictions that were noted by earlier readers, however, exist only on the level of language and do not reflect substantive differences in thought. When al-Ghazālī uses occasionalist language, Frank claims, he subtly alters the traditionalist language of the Ashʿarite school, making it clear that he does not subscribe to its teachings. Thus, although al-Ghazālī's language in such works as *The Balanced Book* often reflects that of the traditionalist Ashʿarite manuals, his teachings even in that work express creation by means of secondary causality.[20]

Frank's ideas were not unopposed. Michael E. Marmura in particular, who in a number of earlier articles had argued that al-Ghazālī was an occasionalist,[21] rejected the suggestion that al-Ghazālī accepted efficient causality among God's creatures.[22] Other interpreters such as William L. Craig had followed Marmura in their analysis and had maintained that al-Ghazālī "did not believe in the efficacy of secondary causes."[23] Reacting to Frank's suggestion, Marmura conceded that al-Ghazālī makes use of causalist language, "sometimes in the way it is used in ordinary Arabic, sometimes in a more specifically Avicennian / Aristotelian way" and that this usage of language is innovative for the Ashʿarite school discourse.[24] Yet in all major points of Muslim theology, al-Ghazālī held positions that closely followed ones developed earlier by Ashʿarite scholars, such as the

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possibility of miracles, the creation of human acts, and God's freedom in all matters concerning the creation of the universe.[25] In Marmura's view, al-Ghazālī never deviated from occasionalism, although he sometimes expressed his opinions in ambiguous language that mocked philosophical parlance, likely to lure followers of *falsafa* into the Ash'arite occasionalist camp.

Marmura does not assume that al-Ghazālī expressed different opinions about his cosmology in different works. In research published since Frank's 1992 study, Marmura focuses on *The Balanced Book* and tries to prove that at least here, al-Ghazālī expresses unambiguously occasionalist positions.[26] Using a passage in the *Incoherence,* Marmura assumes this work to be the "sequel" to that work of refutation, in which al-Ghazālī "affirms the true doctrine."[27] For Marmura, the *Balanced Book* is thus the most authoritative work among al-Ghazālī's writings on theology. Like Frank, he claims that a close reading of all of al-Ghazālī's texts will find no contradictions on the subject of cosmology. Marmura acknowledges that al-Ghazālī uses causalist language that ascribes agency to created objects in the *Revival*, in the *Incoherence*, in the *Standard of Knowledge*, and in other works. Yet such language is used metaphorically, just as we might say "fire kills" without assuming that it has such agency in real terms.[28] Rather, the causal language must be read in occasionalist terms.[29] Al-Ghazālī's use of such words as "cause" (*sabab*) or "generation" (*tawallud*) is only metaphorical, Marmura claims. These terms are commonly used in Arabic, and "it would be cumbersome to have to keep on saying that this is metaphorical usage, or that the reference is to habitual causes and so on."[30] Like Frank, **(p.182)** Marmura is aware of the significant extent to which Avicenna's thought has shaped al-Ghazālī's theology. Marmura sees in al-Ghazālī "a turning point in the history of the Ash'arite school of dogmatic theology (*kalām*)."[31] He adopts many of Avicenna's ideas and reinterprets them in Ash'arite terms. Although al-Ghazālī's exposition of causal connections often draws on Avicenna, the doctrine that he defends is Ash'arite occasionalism.[32]

Both Frank and Marmura deny the possibility that al-Ghazālī showed any uncertainty or may have been in any way agnostic about which of the two competing cosmological theories is true.[33] Frank bemoans al-Ghazālī's failure to compose a complete, systematic summary of his theology.[34] He also believes that there was no notable theoretical development or evolution in al-Ghazālī's theology between his earliest works and his last. This theology is the one Frank had characterized in his *Creation and the Cosmic System*, and it is, in Frank's view, "fundamentally incompatible with the traditional teaching of the Ash'arite school."[35] Rejecting this last conclusion, Marmura does agree that al-Ghazālī held only one doctrine on cosmology and causation. Marmura discusses the passage from the twentieth discussion in the *Incoherence* where al-Ghazālī admits that "both these two views are possible for us."[36] Marmura argued that the evidence from texts such as*The Balanced Book on What-to-Believe* and some textual expressions in the *Incoherence* lead to the assumption that al-Ghazālī was committed only to his first causal theory from the Second Position of the seventeenth discussion, the occasionalist one. The "second causal theory"—that is, the one from the Second Approach of the Second Position, which accepts the existence of natures and assumes that causal relations are not

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suspended when God creates the miracles—has been introduced merely to win the argument that all miracles reported in revelation are possible; al-Ghazālī was not committed to it.[37]

Recently Jon McGinnis proposed an explanation that reconciles the textual evidence provided by Frank and Marmura to support their mutually exclusive claims. McGinnis believes that al-Ghazālī developed an intermediate position between traditional Ash'arite occasionalism and the *falāsifa*'s theory of efficient causality. For al-Ghazālī, causal processes exist, according to McGinnis, but they are immediately dependent upon a divine, or at least angelic, volitional act. A cause is only sufficient for its effect to occur, according to McGinnis's interpretation of al-Ghazālī, when such a higher volitional act immediately actualizes the cause. Cause and effect react to what might be understood as their natures—thus allowing humans to predict their reactions—but these natures are only passive powers that do not develop any agency or efficient causality by themselves. God or a volitional agent must actualize their passive powers. This volitional agent is the real agent or efficient cause of the causal connection. The actualization is immediate and cannot be mediated by a chain of secondary causes, for instance. According to McGinnis, al-Ghazālī rejected both the occasionalist position of classical Ash'arism as well as the secondary causality of the *falāsifa* and developed a third view that combines elements of these two.[38]

(p.183) Five Conditions for Cosmological Explanations in the *Incoherence*

When Michael E. Marmura considered the suggestion that al-Ghazālī might actually have held two different explanations of cosmology as compossible, he saw "no compelling reason or textual indication for believing that he is committing the error of thinking that they are."[39] Occasionalism and secondary causality are mutually exclusive, Marmura argues; one denies causal efficacy while the other affirms it. Assuming compossibility in this case, however, does not assume that an event is caused both by an inner-worldly efficient cause *and also* immediately by God. Rather it means—as al-Ghazālī has put it several times in the seventeenth discussion of the *Incoherence*—that God is the creator of the event "either through the mediation of the angels or without mediation."[40] Although God's control over all events in this world is unquestioned, the way He exerts this control is left open.

Still, one might ask, given that occasionalism and secondary causality are so different, how could al-Ghazālī posit that they offer equally convincing theories of God's creative activity? In his *Incoherence,* al-Ghazālī developed certain conditions with which any occasionalist and causalist theory must comply in order to explain adequately both phenomena in the world and God's creative activity as learned from revelation. These conditions are nowhere clearly listed or spelled out, yet they can be inferred mostly from the Second Position of the seventeenth discussion. There, al-Ghazālī tries to convince his readers that a properly conceived occasionalist position as well as a proper view of secondary causality each lead to accepting the prophetical miracles of revelation.

Accepting the miracles reported in revelation is the first of these five conditions. It is not, however, al-Ghazālī's only concern in these passages. He puts drastic words in the

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mouth of his opponent when he makes him criticize occasionalism's indeterminism. An occasionalist worldview forfeits the possibility of making any assumptions about what is currently happening in places that are not subject to our immediate sense perception, as well as for events in the future. As al-Ghazālī portrays his philosophical adversary saying, occasionalism leads to the assumption of "hideous impossibilities" (*muḥālāt shanīʿa*) that destroy not only the pursuit of the natural sciences but also any coherent understanding of the world.[41] Al-Ghazālī's examples are not chosen—or adopted—without humor, and his readers are clearly left to enjoy the occasionalist position as an object of ridicule.

Creating a coherent understanding of the world that allows assumptions or even precise predictions about what is not immediately witnessed and what will happen in the future was a clear concern of al-Ghazālī and it is the second condition on our list. He would not have accepted an occasionalist explanation of cosmology that violates this criterion. Two other criteria for his cosmology can be taken from other parts of the *Incoherence*. At the end of that work, al-Ghazālī condemns three positions as unbelief (*kufr*). Two of the three positions that he condemns concern cosmological theories, namely, that **(p.184)** the world is eternal and that God does not take note of individuals but only knows classes of beings. Since these positions "do not agree with Islam in any respect, and (…) none of the Muslim groups believes in it,"[42] any cosmological explanation acceptable to al-Ghazālī must—in a reverse conclusion—acknowledge that the world is created in time and that God knows all His creations both universally and as individuals.

Finally, a fifth condition can be gathered from the pages of the *Incoherence*. In the First Position of the seventeenth discussion, al-Ghazālī denies that fire could be either the efficient cause or the agent (*fāʿil*) of the cotton's combustion. Fire is inanimate and has no action.[43] This argument refers back to the third discussion of the *Incoherence*, in which al-Ghazālī criticizes Avicenna and his followers for their views on God's will. It is true, he says, that the *falāsifa* claim God is the maker (*ṣāniʿ*) of the world as well as its agent or efficient cause (*fāʿil*). In order to be an agent or efficient cause, however, one needs to have both a will and a free choice (*murīd mukhtār*). "We say that agent (*fāʿil*) is an expression [referring] to one from whom the act proceeds together with the will to act by way of free choice (*ikhtiyār*) and the knowledge of what is willed."[44] Here, the *falāsifa* disagree and say that any being can be an agent (*fāʿil*) as long as it is the proximate efficient cause of another being. Fire as the proximate efficient cause of the cotton's combustion may be called its secondary agent.[45]

Al-Ghazālī strongly objects and refuses to accept the terminology of the *falāsifa*. He insists that the word "action" is elliptical for "voluntary action" since an involuntary action is inconceivable.[46] The disagreement is fundamental and its implications are far-reaching. In addition to being the efficient cause of another thing, an agent must thus fulfill three other conditions. He or she must (1) have will or a volition (*irāda*), (2) have a choice (*ikhtiyār*) between alternative actions, and (3) know what is willed.[47] In the *Incoherence,* al-Ghazālī gives the strong impression that humans and other animated beings such as the celestial spheres can be considered agents. Later in his *Balanced Book,* al-Ghazālī clarifies that although humans may fulfill the two first conditions, that is, volition and free

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choice, the last condition cannot apply to humans since they do not have a full knowledge of what is created when they act.[48] In his autobiography, al-Ghazālī says clearly that the celestial objects, for instance, have no action (*fiʿl*) by themselves, as they are all subject to God's command who employs all of nature according to His will.[49] The same is true for humans, who are subject to God's will and lack this full knowledge. That humans are not agents and that God is the only agent in the universe are prominent motifs in the *Balanced Book* as well as in the *Revival*. Al-Ghazālī's position in the *Incoherence* must be considered dialectical, aiming to convince the *falāsifa* of the rather limited position that inanimate beings can never be considered "agents."[50]

In the *Incoherence,* al-Ghazālī does not present anything that might be considered a philosophical argument as to why he rejects the technical language of the *falāsifa* on this particular point.[51] He simply refers to the common usage of the word "action," seemingly just disagreeing over the choice of language. Al-Ghazālī prefers to use the Arabic word *fāʿil* according to the meaning it has in Muslim theology over its meaning for the Aristotelian philosophers.[52] **(p.185)** Among the *mutakallimūn*, however, language usage was a commonly used tool for establishing *kalām* doctrines. Unlike in *falsafa*, where the terminology was often based on Arabic expressions constructed to parallel Greek words, the Muʿtaziltes established early the habit of invoking common usage of Arabic to support distinct theoretical positions.[53] The Ashʿarites were the heirs to the Muʿtazilites in this approach. Their underlying idea seems to be that language and the particular relationship between words and their referring objects are God's creations. This theory is particularly true for Arabic, the language chosen by God for His revelation. Relying on referential relationships that are not sanctioned by common usage not only is erroneous but also is tampering with the bond that God created between Himself and humans through creating a language that is used by both sides.

Al-Ghazālī accuses the *falāsifa* of obfuscation and of using language that aims to create the impression (*talbīs*) that their God is a true agent. Yet they implicitly reject this position because they deny His will and free choice. In reality, the *falāsifa* teach that God "acts" out of necessity, which means for al-Ghazālī that God does not act at all. The philosophers' God differs from a dead person only inasmuch as He has self-awareness.[54] When the philosophers say that God is the maker (*ṣāniʿ*) of the world, they mean it only in a metaphorical sense.[55] In his *Incoherence of the Philosophers,* al-Ghazālī ridicules Avicenna for attempting to ascribe a will to God while still denying an active desire or deliberation on God's part.[56] This usage, al-Ghazālī says, is a purely metaphorical use of the word "will," and it unduly stretches its established meaning. Al-Ghazālī criticizes Avicenna's teachings as effectively being a denial of the divine attribute of will.[57] In the Third Position of the seventeenth discussion, in which al-Ghazālī discusses rules that not even God can violate in His creation, he clarifies, "we understand by 'will' the seeking after something that is known (*ṭalab maʿlūm*)." Therefore, there can be no will where there is no desire.[58]

For al-Ghazālī, the concept of divine will (*irāda*) on God's part excludes His acting out of necessity.[59] All through the *Incoherence*, al-Ghazālī maintains that God creates as a free

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agent (*mukhtār*) rather than out of the necessity of His nature. In total, there are thus five conditions for cosmological explanations that can be gleaned from the *Incoherence.* Any viable explanation of cosmology:

1. must include an act of creation from nothing at some point in time;
2. must allow that God's knowledge includes all creatures and all events, universally and as individuals;
3. must account for the prophetical miracles that are related in revelation;
4. must account for our coherent experience of the universe and must allow predictions of future events, meaning that it must account for the successful pursuit of the natural sciences; and
5. must take into account that God freely decides about the creation of existences other than Him.

What would an occasionalist explanation that fulfills these five criteria look like? Any occasionalist cosmology easily fulfills criteria 1, 2, 3, and 5. In the **(p.186)** *Incoherence,* al-Ghazālī points out that a wrongly conceived occasionalism violates the fourth condition, that of the predictability of future events. As long as one cannot discount that books could be turned into animals, for example, there is no way that an occasionalist explanation can allow or even support the pursuit of the natural sciences. The fourth criterion is fulfilled, however, if the occasionalist assumes that God does not make sudden *ad hoc* decisions about what to create next. In the *Incoherence,* such a conviction is bolstered by the premise that God's actions are strictly habitual. Absurdities such as the one mentioned above will not happen, because they are known to have never happened in the past. We build our knowledge of God's habit from past occurrences that we witnessed ourselves and that others have reported to us. This knowledge enables us to detect and formulate stable patterns in God's habit.

Still, there is no guarantee that an omnipotent God will not frivolously—or rather purposefully—break His habit. The occasionalist believer firmly trusts in God (*tawakkala*) that He will not turn his library into an animal zoo. This is one of the lower degrees of trust in God, writes al-Ghazālī in the thirty-fifth book of his *Revival of the Religious Sciences*. There, he compares the occasionalist believer who has trust in God to someone involved in a legal dispute in court. The claimant puts his confidence in winning the case in the hands of a legal attorney (*wakīl*).[60] The clients of the attorney are well familiar with his habits and how his customary procedures follow regularly after each other (*ʿādātuhu wa-ṭṭirād sunanihi*). The claimant is familiar, for instance, with the attorney's custom to represent his clients without calling them as witnesses. The attorney defends his clients just on the basis of what they have written down in a file (*sijill*). If the client is well familiar with this habit of his attorney and if he truly trusts him, he will assume that the attorney will try to resolve the case based solely on the file and that the attorney will not call upon him in court. The client will thus plan accordingly, preparing a comprehensive file to hand the attorney while also knowing that his attorney will not ask him to testify in court. He can sit calmly and trustingly and await the outcome of the case:

> When he entrusts [his affairs] to him [*scil.* the attorney], his trust is complete

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> (*tamām*) when he is familiar with his [attorney's] customary dealings and his habits and when he acts according to what they require (*wāfin bi-muqtaḍāhā*).[61]

Trust in God, therefore, requires acting in accord with God's habitual order of events. "You understand that trust in God does not require one to give up any kind of planning (*tadbīr*) or action."[62] Rather, it requires arranging one's life patterns to match what we know is God's habit. Someone who is convinced of occasionalism and who has trust in God, for instance, does not need to keep the windows of his library closed simply because he might fear that his books may be turned into birds and fly away. Such a provision is unwarranted, given what we know about God's habits.

(p.187) Determination by an Unchanging Divine Foreknowledge

Yet there are higher degrees of trust in God (*tawakkul*) that provide the believer with deeper certainty about the strictly habitual character of God's actions. These levels of trust are already hinted at in the seventeenth discussion of the *Incoherence*. There, in the First Approach of the Second Position, in which al-Ghazālī aims to present occasionalism as a viable explanation of physical processes, he suggests that all events in the world have already been determined by God's foreknowledge. In such an occasionalist universe, prophetical miracles can indeed be created: God disrupts His habitual course of action and adapts the knowledge of the witnesses to His disrupted course of action. It seems that in this occasionalist universe, God is not bound by anything. Yet here al-Ghazālī throws in a thought:

> There is, therefore, nothing that prevents a thing from being possible within the capacities of God [but] that it will have already been part of His prior knowledge that He will not do it—despite it being possible at some moments—and that He will create for us the knowledge that He does not do it in that moment.[63]

If God has a pre-knowledge of all events that are to be created in the future, that pre-knowledge not only limits how He will act upon His creation but also determines all His future actions.

The idea of a divine foreknowledge that determines creation was expressed most strongly in the generation after al-Ghazālī in one of the creeds that Ibn Tūmart taught to his Almohad followers. Ibn Tūmart found eloquent ways of expressing God's prior determination of events: "The means of living (*arzāq*) have already been allocated, the works have been written down, the number of breaths have been counted, and the lifespans (*ajāl*) have been determined."[64] Chapter twelve in Ibn Tūmart's *Creed of the Creator's Divine Unity* (*Tawḥīd al-Bārī*) is even more explicit:

> Everything that is preceded by [God's] decision (*qaḍā'*) and His determination (*qadar*) is necessary and must become apparent. All created things come out of (*ṣādira*) His decision and His determination, and the Creator makes them appear according to how He determined them in His eternity (*fī azaliyyatihi*). [They follow out of his decree] without addition or diminishing, without alteration of what has been determined, and no change of what has been decided. He generates them

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> without an intermediary and without bestowing them to a cause (*ʿilla*). He has no companion in his originating activity (*inshāʾ*) and no assistant in making [things] exist (*ījād*).[65]

Ibn Tūmart clearly imagines an occasionalist universe in which God "generates without an intermediary and without bestowing [His creations] to a cause" (*awjadahā lā bi-wāsiṭa wa-lā li-ʿilla*). Yet if all future breaths are counted, the **(p.188)** future contingencies in such a universe are limited to what is already known to God. God's eternal foreknowledge has already determined the course of the world.

The notion that God knows future events appears already in the Qur'an. Several verses mention that God determines every human's lifespan (*ajal*) and time of death (Q 6:2, 11:3, 14:10, 16:61, etc.). At death, God executes His predetermined decision and "calls home" (*tawaffā*) the person (Q 39:42). Like the time of death, the means of living (or: sustenance, *rizq*) are allocated to the human individuals (Q 11.6, 89:16, 13:26). Finally there is the more general idea, expressed in verses 9:51 and 57:22 of the Qur'an, that nothing will happen to humans that has not been recorded by God. In the prophetical *ḥadīth,* the motif of divine predetermination is even stronger than in the Qur'an. Al-Bukhārī documents a number of versions of a prophetical saying that teaches that while the child is still in the womb, God determines four characteristics for him or her: the sex, the person's redemption or ruin in the afterlife, the sustenance (*rizq*), and the lifespan.[66] Other prophetical *ḥadīth*s refer directly to God's pre-knowledge of some future events. One prophetical saying states: "Fifty thousand years before God created the heavens and the earth, He wrote down the measure of the creatures (*maqādīr al-khalāʾiq*)."[67]

In particular, the numerous Qur'anic verses on the set lifespan (*ajal*) of a human have produced much theological speculation. Does a murder override God's determination and cut short the appointed lifespan of the victim, or is the murderer rather the means by which God makes his determination come true?[68] Is only the human time of death predetermined, or does every event have its predetermined time? Indeed, the Qur'an does say that "every nation has its lifespan" (*li-kull umma ajal*, Q 7:34).

Early Sunni Muslim theology centers on opposition to Muʿtazilism, which stressed human freedom rather than the invariable predetermination of their time of death.[69] Sunni theologians, therefore, found it easy to accept predestinarian positions. Al-Ashʿarī, for instance, believed that everything that comes into being is necessarily the will of God; God not only wills the time of a person's death but also the way it comes about. The same is true for a person's sustenance (*rizq*) and—this subject became connected to this discussion in *kalām* literature—the prices (*asʿār*) of things.[70] Al-Ashʿarī's understanding of God's knowledge clearly includes an element of foreknowledge. He taught that "God wills the coming into existence of the thing according to how divine knowledge precedes it (*mā sabaqa bihi al-ʿilm*); and He wills what is known [to Him] to come into existence, and what fails to be known [to Him] not to come into existence."[71] For al-Ashʿarī, however, the subject of divine foreknowledge is somewhat of a side issue in the debate with the Muʿtazila about whether God wills the world's mischief and harm (*sharr*). From his teachings on other subjects, it is clear that al-Ashʿarī did not believe in a universal

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predetermination of events recorded in God's foreknowledge.[72]

The Nishapurian Ashʿarites make stronger statements about God's foreknowledge, which gradually lead toward the direction of universal predestination. In his *Creed,* al-Isfarāʾīnī requires his followers to believe that God's **(p.189)** knowledge "comprises the objects of knowledge in a way that He always knew all of them including their (accidental) attributes and their essences."[73] His colleague ʿAbd al-Qāhir al-Baghdādī clarifies the relationship between God's foreknowledge and His will: whatever God knows will happen is exactly what He wills to happen. God's knowledge represents the decisions of His will: "Whatever God wants to come into existence will come into existence at the time that he wants it to happen (…)."[74]

The subject of divine foreknowledge was not one of the major themes in early Ashʿarite literature. Their notion, however, did attract the criticism of Muʿtazilites such as al-Kaʿbī (d. 319/931), who realized that admitting divine foreknowledge destroys human free will and questions God's justice.[75] In the early part of the fifth/eleventh century, his Muʿtazilite colleague Abū l-Ḥusayn al-Baṣrī argued against the determinism of Sunni theologians. These theologians—most probably Ashʿarites—are quoted as saying, "What the divine knowledge knows will occur cannot possibly not occur," and "the divine knowledge that a thing will not exist necessitates that it will not exist."[76] Abū l-Ḥusayn al-Baṣrī's lengthy refutation indicates that this position was the subject of a lively debate between the Ashʿarites and their Muʿtazilite adversaries.

Because knowledge is one of the divine attributes that resides in His essence, all Ashʿarites make the statement that God's knowledge exists from past eternity (*qadīm*) while human knowledge is generated in time.[77] Al-Juwaynī draws the full consequences of this statement. His position on divine knowledge appears to respond to Muʿtazilite and philosophical objections. Avicenna postulated that if God's knowledge is pre-eternal, (*qadīm*), it cannot simply change with each new creation.[78] Al-Juwaynī agrees, teaching that changing knowledge is a characteristic of humans, whose knowledge adapts to a changing reality. To assume, however, that God's knowledge of the world is like human knowledge and contains "cognitions" or "pieces of knowledge" (*ʿulūm*) that generate in time (*ḥāditha*) is implausible. It also violates the consensus of the Muslim scholars, al-Juwaynī says, even amounting to leaving Islam.[79] The pre-eternal character of God's knowledge implies that God's knowledge never changes. It contains all future objects of knowledge, including the "time" when they will be realized.

An adversary may come and say, al-Juwaynī assumes, that in His eternity (*fī azalihi*), God had the knowledge that the world will one day be created. Once the world has been created and continues to exist, there was a new and different object of knowledge. The opponent holds that God's knowledge and awareness of the existence of the world has adapted to this new reality. This opponent maintains that there are new cognitions (*ʿulūm*) in God's knowledge every time there is change. Al-Juwaynī categorically rejects this line of thinking:

> We say: The Creator does not acquire a new awareness (*ḥukm*) that did not exist

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> before. There are no successive "states" (*aḥwāl*) for Him because the succession of states would imply for Him what is implied by the succession of accidents in a body. The Creator is qualified as having only one single knowledge that extends to eternity in **(p.190)** the past and in the future. This knowledge necessitates for Him an awareness that encompasses all objects of knowledge with all their details. The Creator's knowledge does not increase in number when the objects of knowledge become more. [This is not like in the case of] those cognitions that come about in time, which become more numerous when the objects of knowledge become more numerous. The Creator's knowledge does not become more numerous when there are more objects of knowledge and equally it does not become new when they become new.[80]

When someone learns that Zayd will arrive tomorrow, al-Juwaynī explains, he does not require a new cognition about Zayd's arrival once he has arrived. He knew that all along, strictly speaking. The uncertainty of Zayd's action prior to its actualization, however, requires us humans to form a new cognition once Zayd has arrived. In God's knowledge of His own actions, however, there is no such uncertainty. Knowing that Zayd will arrive at a certain time is identical to knowing the realization of this event; no modification of God's knowledge is needed when the event is actualized.

According to al-Juwaynī, God's knowledge of the world is timeless. It contains a "before" and "after" but does not follow the course of events according to the patterns of past, present, and future. Those events that are currently in the past are to be realized before those that are currently in the future. God knows precisely the succession of events. He knows what has happened in the past, just as He knows—with the same amount of detail—what will happen in the future. His knowledge exists in a timeless realm—"in His eternity," as al-Juwaynī and Ibn Tūmart say—outside our human categories of past and future. Since there are no obstacles to whatever God wills, His knowledge is the result of His will. The two are, however, not identical, nor does God's knowledge determine His will. God's will and His knowledge do not consist of smaller units that could be called volitions or cognitions. God has one eternal will as well as one eternal knowledge.[81]

Divine Foreknowledge in the Revival of Religious Sciences

Al-Ghazālī subscribed to al-Juwaynī's understanding of God's knowledge as single and all-encompassing. In a passage that appears in the *Book of the Forty* and in the short creed at the beginning of the second book in the *Revival*, al-Ghazālī uses colorful language to illustrate that God knows every speck on the earth and in the heavens (cf. Q 10:61):

> In the darkest night God knows the crawling of the panther on the solid rock and He senses the movement of the dust-motes in the air. He knows what is hidden and what is apparent. He is aware of the innermost thoughts, the movement of ideas, and the secret fears through a knowledge that is pre-eternal (*qadīm*) and everlasting **(p.191)** (*azalī*) and He will continue to be characterized by this knowledge in all eternity. His knowledge is not renewed and in its essence does not adapt to the undoing [of earlier arrangements] or to relocation.[82]

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If God's knowledge is not renewed by the changing of events, it follows that it has a detailed and determining foreknowledge of the future. In the several creeds that al-Ghazālī wrote during his lifetime, he was somewhat careful not to mention too openly that God predetermines all future events. He is probably most explicit in a brief list of articles of faith at the beginning of the second book in his *Revival*. There, he says:

> God's will is an eternal attribute that He has, which subsists (*qā'ima*) within His essence (*dhāt*) as one of His attributes. By virtue of it He is continuously described as someone who wills in His eternity (*fī azalihi*) the existence of the things in their moments (*fī awqātihā*) that He has determined. They exist in their moments as He wills it in His eternity without one of them coming before or after [He wills it]. Rather, they occur in accordance with His knowledge and His will without change or alteration (*min ghayr tabaddul wa-lā taghayyur*). He has arranged (*dabbara*) the things not by means of a sequence of thoughts [that He has] and nor does He wait for a [specific] time. Therefore, one thing does not distract Him from another.[83]

This passage seems to have been one of the inspirations for Ibn Tūmart's creed.

Yet, although al-Ghazālī requires belief in divine foreknowledge, he does not explicitly say that God's will "in His eternity" predetermines future events in this world, such as the number of breaths that a human will take during his or her lifetime. In his *Letter for Jerusalem*, which follows a few pages after this passage, he is even less explicit on this subject. On divine knowledge, he just says that God's universal knowledge is evident in the detailed arrangement (*tartīb*) of even the smallest things in creation. God paves the way (*raṣṣafa*) for the existence of everything.[84] He then slips into an elaborate argument taken from one of al-Juwaynī's writings. Al-Ghazālī's master is said to have used it, according to al-Murtaḍā al-Zabīdī, against the Muʿtazilite al-Kaʿbī. Al-Kaʿbī claimed that if God had a detailed foreknowledge of future events, it would make His will redundant. Al-Ghazālī then reproduces al-Juwaynī's rebuttal, targeting al-Kaʿbī's accusation that for the Ashʿarites God's knowledge is the same as His will. Al-Ghazālī's counterargument denies al-Kaʿbī's hypothesis that a thing comes into being at the time when God's foreknowledge foresees it, rather than at the time when His will willed it. If that hypothesis were true, al-Ghazālī responds, one could also say that God's foreknowledge would make His power redundant were He to foresee something before enacting it. Rather, al-Ghazālī aims to correct this perception by saying that whereas God's power encompasses all possible creations, His will directs His power to enact one of the possible actions and prevents the alternatives from happening.[85] In the **(p.192)** *Revival*, however, he fails to clarify the role of divine foreknowledge in this process. He covers this subject in *The Balanced Book on What-to-Believe* in a long chapter about God's will and its relationship to His omnipotence and His foreknowledge.[86] There he adds that divine foreknowledge is not sufficient to replace the will, because "divine knowledge follows that what is known" (*al-ʿilm yatbaʿu al-maʿlūm*), meaning that the decisions of the divine will determine the contents of the divine knowledge. "What is known" (*al-maʿlūm*) to the divine knowledge are the divine acts that God's will has chosen to actualize from among all the acts possible for God's power. The foreknowledge does not affect this decision. The divine attribute of

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will decides among equally possible alternatives. The attribute of knowledge is true to (*ḥaqqa*) the divine will and takes account of this decision; al-Ghazālī says it "attaches itself" (*yataʿallaqu bi-*) to the decision.[87]

Although al-Ghazālī discusses some of the doctrinal problems of divine foreknowledge in his *kalām* textbook and in the second book of the *Revival* on the creed of Islam, he hardly ever explains its practical consequences for such subjects as cosmology or human actions.[88] This is particularly true of the other books of the *Revival* that are concerned with rectifying human actions (*muʿāmalāt*), in which divine foreknowledge is only mentioned in brief references. Divine predestination and foreknowledge are variously referred to as God's "eternal power" (*al-qudra al-azaliyya*), God's "eternal judgment" (*ḥukm azalī*), or God's "eternal will" (*irāda azaliyya*),[89] yet it is never explained what the "eternal" stands for and what implication it has on God's creation. The reason for al-Ghazālī's reluctance to give his readers a detailed account of God's foreknowledge is didactic. If half-educated people are told that God knows the future, they may draw false conclusions, decline to handle their affairs, and fall into a fatalistic apathy. Al-Ghazālī expresses this danger in several passages of the *Revival*; wishing to guide his readers to good action, he stresses that God will be pleased by some of their actions while detesting others. His readers are exhorted only to perform those actions that will please God and gain them afterlife's reward.

The human's choice stands in an obvious conflict with God's predestination. In at least two passages, al-Ghazālī tries to resolve this conflict, as we will see below. In various other places, however, al-Ghazālī simply rejects any discussion of this conflict. He presents the problem in the familiar terminology of God's decision (*qaḍāʾ*) and His determination (*qadar*). In theological discussions, both terms refer to God's predetermining future events.[90] The subject of divine predestination appears several times in the thirty-second book of his *Revival,* in the discussions of the human's patience and his or her thankfulness to God. Yet al-Ghazālī tries to avoid candid statements about God's all-encompassing predestination, several times shunning his inquisitive readers for questioning God's predetermination of the future:

> Accept God's actions (*ādāb*) and stay calm! And when the predestination (*qadar*) is mentioned, be quite! The walls have ears and people who have a weak understanding surround you. Walk along **(p.193)** the path of the weakest among you. And do not take away the veil from the sun in front of bats because that would be the cause of their ruin.[91]

"Divulging the secret of predestination" (*ifshāʾ sirr al-qadar*) is simply not allowed.[92] It is best to be silent on this subject and follow the example of the Prophet who, according to al-Ghazālī, said: "Predestination is God's secret, so do not divulge it!"[93] In fact, those who have insight say: "Divulging the secret of God's lordship is unbelief."[94] At times, however, al-Ghazālī himself comes close to disregarding this advice. When he discusses divine predestination, however, he limits himself to saying that God wills all human actions, those that please Him as well as those that He detests, and that He creates both the good and the bad human actions. This distinction is directed against the Muʿtazilite

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position that God cannot will morally bad actions. Al-Ghazālī leaves no doubt, however, that although God creates all events in the world, the choice between good and bad actions is left to humans, who are all responsible for what they do.

Divine foreknowledge and God's all-encompassing predetermination are important parts of al-Ghazālī's cosmology and his ethics.[95] Understanding that God has such pre-knowledge represents a higher degree of trust in God than relying on conclusions drawn from God's habits. This higher trust in God is closely linked to the proper understanding of divine unity (*tawḥīd*). Indeed, advancing to the higher stages of *tawḥīd* is the root that helps one develop this superior trust in God. Acquiring a correct understanding of God's unity and thus a deep trust in God represents the knowledge—belief in the heart (*taṣdīq bi-l-qalb*) is tantamount to knowledge—that will lead to good and virtuous actions.[96]

Al-Ghazālī's ethics in his *Revival* is premised by the thought that God's will as well as His knowledge are pre-eternal (*azalī*) and have existed long before creation began. They include the first event of creation as well as the last. God already knows whether the crawling panther will catch his prey, and He knows which direction each speck of dust will take in the wind. Most important, if God's knowledge is single and unique, it will also never change. The concept of an unchanging divine foreknowledge has significant repercussions for an occasionalist view of creation. God does not make *ad hoc* decisions about what to create next; His decisions have already been made long before He started acting. In addition, God's decisions are recorded in one of His loftiest creations. All past and future events are contained in the "well-guarded tablet" (*al-lawḥ al-maḥfūẓ*) that sits in a heavenly realm.[97] For al-Ghazālī, the tablet, which is mentioned in verse 85:22 of the Qur'an, represents a blueprint of God's creation and records human actions as well as all other created events.[98] A divine pen has written God's plan for His creation onto this tablet. In his *Decisive Criterion,* al-Ghazālī quotes a canonical *ḥadīth* that identifies this pen, which appears in two enigmatic references in the Qur'an (68:1, 96:4), as God's first creation.[99]

The view that the well-guarded tablet holds the detailed draft for God's creation is widespread in philosophical literature. In Avicenna's *Throne Philosophy* (*al-Ḥikma al-ʿarshiyya*), "the well-guarded tablet" is read as a Qur'anic reference to two different beings: the highest created being as well as the active **(p.194)** intellect, both are intellects in the heavenly realm. In the sixteenth discussion of his *Incoherence,* al-Ghazālī reports the philosophical teaching that the well-guarded tablet is a Qur'anic reference to the active intellect. There he criticizes this element of the *falāsifa*'s teaching as unproven and bemoans that the people of religion (*ahl al-shar*ʿ) do not understand the well-guarded tablet in this way.[100] Yet the reported positions on the well-guarded tablet are not at all controversial, nor was al-Ghazālī's own view significantly different. He later refers to an important element of the philosophers' teachings that touches on the subject of the well-guarded tablet. In his *Revival*, he explains prophetical divination as a contact between the minds of the prophets and the well-guarded tablet, which here functions equivalently to the *falāsifa*'s active intellect.[101] Sometimes normal people achieve such a contact in their dreams, which may lead to the phenomenon that we today call *déjà vu*.

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For some time after this dreamtime contact with the active intellect, one remembers the future events one has seen there, and when such an event occurs, one gets the impression that it has happened for the second time. Prophets achieve such a contact and experience of future events while they are awake. In other words, the prophets can "read" future events on the well-guarded tablet, and they report these future events to their followers.[102]

When al-Ghazālī expounds this view in the twenty-first book of his *Revival*, he describes the well-guarded tablet as that thing "which is inscribed with everything that God has decided upon until the Day of Judgment."[103] Here "the well-guarded tablet" does not refer to the active intellect but rather to God's first creation, which is much higher in the celestial hierarchy of intellects. The same categorization applies to a passage in the *Book of the Forty* in which al-Ghazālī quotes approvingly the position of an unnamed scholar as saying that "[God's] decision (*qaḍā'*) means that all beings exist on the well-guarded tablet, both in a general way as well as in [their] details."[104] In al-Ghazālī's thought, just as in Avicenna's *Throne Philosophy*, "the well-guarded tablet" refers to both the first creation as well as the active intellect, without clearly distinguishing between these two.

God's unchanging foreknowledge turns an occasionalist explanation of the world into one that fulfills all the five criteria outlined earlier in this chapter. The habitual character of God's creations is no longer understood as a mere routine of God that He may practice on an *ad hoc* basis. Rather, God's habits are inscribed in His foreknowledge. The contingent correlations that we experience in God's universe are the necessary results of a coherent and comprehensive plan of creation that exists from eternity.

Prophetical Miracles and the Unchanging Nature of God's Habit

Al-Ghazālī's occasionalist explanation of the universe includes the conviction that God's decisions follow a habit inscribed in a timeless divine foreknowledge. But how strict is God's commitment to His habit? Does He ever break it? In the *Incoherence,* al-Ghazālī argues that the possibility of a break in God's **(p.195)** habit should lead us to acknowledge that the connections between what we call causes and their effects are not necessary. Does God ever actualize this possibility? According to the classical Ashʿarite view, prophetical miracles are breaks in God's habit. Given that the natural scientist studies the lawfulness of God's habits, would prophetical miracles not spoil his or her efforts?

Classical Ashʿarism had already developed an answer to this problem. The effect of a prophetical miracle depends on those witnessing it knowing it to be a miracle. They must be made aware that what they have witnessed is a break in God's habit.[105] Classical Ashʿarite theology recognized several conditions for prophetical miracles that aim at making prior identifications of miracles. According to al-Ashʿarī, a true prophet must announce and describe the miracle that God will perform. He must issue an announcement (*daʿwa*) that God will perform a miracle and a challenge (*taḥaddin*) to those to whom he is sent. Muḥammad, for instance, issued a challenge to his adversaries when he dared them to produce a single *sura* like those contained in the Qur'an (Q 2:23, 10:38). In order for the miracle to be valid and acceptable to his audience, God must

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perform it exactly the way the prophet earlier describes it.[106]

Al-Juwaynī gives a detailed description of the conditions that are necessary in order to accept a miracle. They include the prophet's announcement and his challenge to those who doubt his prophecy. The goal of these strict conditions was to distinguish a prophetical miracle both from simple marvels and from sorcery. Given that in classical Ashʿarism, the miracle is considered the only way to verify prophecy, much was at stake. The authority of revelation and with it the existence of revealed religion rested on the proper identification of the prophetical miracle and on its distinction from mere coincidence or magic.[107]

Other than in his *Incoherence,* al-Ghazālī writes a few times about prophetical miracles in traditional Ashʿarite terms.[108] Unlike his master al-Juwaynī, however, he does not write about the conditions of the miracle and does not say, for instance, that a miracle must be preceded by a challenge. This is because, unlike his predecessors in the Ashʿarite school, he no longer believes that miracles are the only way, or even a good way, to verify the claims of a prophet. Al-Ghazālī believed that miracles could not be credibly distinguished from marvels and sorcery. In his autobiography, he discusses the case of someone claiming to be a prophet when he performs one of the prophetical miracles that, according to the Muslim tradition, confirmed the prophecy of Jesus. The Qur'an reports that Jesus revived the dead (Q 3.39, 5.110), mirroring chapter eleven in the Gospel of John describing Jesus' reviving Lazarus from his grave. Let's assume, says al-Ghazālī, that someone comes along who pretends to do the same and he announces the performance of this miracle in advance—just as earlier Ashʿarites required him to do. Even if he announces and successfully performs the revivication of an apparently dead person, that would not, according to al-Ghazālī, prove his status as a prophet. Al-Ghazālī justifies his position because the miracle of reviving the dead did not create certain knowledge of Jesus' prophecy. Certain knowledge about Jesus' prophecy is gained through other means. One should not accept people's claims to prophecy just on the **(p.196)** bases of so-called miracles. Speaking to those who would follow a pretender purely on the bases of his so-called miracles, al-Ghazālī says:

> Let's assume that your Imam points out to me the miracle of Jesus, peace be upon him, and says: "I will revive your father, and that shall be the proof for me saying the truth." Then he actually revives him and explains to me that he is truly [a prophet]. Yet, how do I know that he speaks the truth? Not all people gained knowledge through the miracle [of reviving a man] that Jesus, peace be upon him, spoke the truth. Rather, the matter was beset with questions and uncertainties that can only be answered by subtle intellectual reasoning. (…) That the miracle points towards the veracity [of him who performs it] cannot be accepted unless one also accepts [the existence of] sorcery (*siḥr*) and knows how to distinguish it from a miracle, and unless one acknowledges that God doesn't lead humans astray. It is well known that the question of whether or not God leads us astray is quite difficult to answer.[109]

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If prophetical miracles were to create definite knowledge about the claims of prophets, there would be no disagreements among humans as to who is a prophet. Jesus did revive Lazarus, yet the Jews still did not accept his prophecy. The Qur'an (Q 5.110) states that the unbelievers among the Children of Israel considered all miracles performed by Jesus to be mere sorcery (*siḥr*). This is due to it being nearly impossible, al-Ghazālī implies, to distinguish a prophetical miracle from sorcery. While God creates the former to guide people to his revelation, He also chooses to create the latter to confuse and misguide people. Humans are not given the faculty, so goes the implication, to clearly distinguish between the two.

In addition, there is the problem that only a limited number of people would personally witness the miracle, and all other humans would have to believe the viewers' judgment that the miracle was indeed not sorcery. Thus, when deciding whether an event or a text is truly a divine revelation, humans can only practice *taqlīd*; they must accept the positions of other people uncritically. This is quite a horrible thought for al-Ghazālī. In addition, further generations must verify the reports about the miracle and the judgments of its witnesses through impeccable chains of transmission (*tawātur*). This creates a new source of error. Al-Ghazālī was quite skeptical about the value of *tawātur*. Muḥammad's alleged appointment of ʿAlī at Ghadīr Khumm is an example of an event that never happened, according to al-Ghazālī, yet many in the Shiite community still trust its veracity because of its supposedly impeccable chains of transmission. If such a large group of Muslims accepts the historicity of a past event that never actually took place, no community can be immune to error in matters of *tawātur*[110].

In the *Deliverer from Error*, al-Ghazālī says that only at an advanced stage of his spiritual and intellectual development did he realize that miracles are not the best way of verifying prophecy. After reading Sufi works, he understood **(p.197)** there to be a way of distinguishing the true prophet from the false pretender without requiring recourse to a prophetical miracle. Prophets create through their teachings and their revelations effects in the souls of those who witness their prophecy. In the *Book of Forty,* al-Ghazālī describes the outward effect (*athar*) that reciting the Qur'an can have: weeping, breaking into sweat, shivering, getting goose bumps, quivering, and so forth.[111] These physical manifestations will inspire reflection on one's deeds. The direct experience (*dhawq*) of the prophet's positive effects on one's soul is the best indicator for the truth of his mission. This method is quite similar to how we distinguish a true physician from a charlatan or a true legal scholar from someone who only claims to be that. In all these cases we look at the people's work. Does the physician heal the sick? Does the legal scholar solve legal problems? If the answers are positive, we accept their claims. The same should be true for the prophets, who are termed physicians of the soul.[112] If we feel the positive effects of a prophet's work on our souls, we know that we are dealing with a true prophet.[113] This method is superior to those of the earlier Ashʿarites:

> Seek certain knowledge about prophecy from this method and not from the turning of a stick into a serpent or from the splitting of the moon. For if you consider that event by itself, and do not include the many circumstances that accompany this

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event you may think that it is sorcery (*siḥr*) and imagination (*taḥyīl*). (…)[114]

There are certain problems (*as'ila*) with prophetical miracles, al-Ghazālī says later in this passage. The classical Ashʿarite argument that a miracle is a sign for prophecy can easily be countered by arguments "about the problematic and doubtful nature of the miracle."[115] The miracle is only one of many indications of true prophecy, al-Ghazālī says cautiously. This position may have resulted from his reflections on miracles in the seventeenth discussion of the *Incoherence*. It is quite clearly expressed in his *Revival*. Here, al-Ghazālī says that Moses gained many followers by changing a stick into a serpent. Yet these same people later followed the false prophet, "the Samaritan" (*al-Sāmirī*), when he made them build the golden calf while Moses was on Mount Sinai: "Everyone who became a believer by seeing a snake inadvertently became an unbeliever when he saw a calf."[116] For most people, miracles are indistinguishable from sorcery and cannot serve as distinctive markers for prophecy. Avicenna had taught that prophetical miracles and sorcery result from the same faculty (*quwwa*) of the human soul. The prophet applies this capacity with good intentions, while the sorcerer (*al-sāḥir*) applies it with bad ones. Sorcerer and prophet, however, have the same kind of strong soul that can affect their surroundings and make other bodies do their bidding.[117] The essential similarity between prophetical miracles and sorcery is due to their origin in the same faculty (*quwwa*) of the prophet's and the sorcerer's souls. This shared origin makes the two events practically indistinguishable. Because of this essential similarity, al-Ghazālī rejected miracles as a means to verify prophecy, and thus he never discussed the conditions of prophetical miracles in his writing. Yet he **(p.198)** nowhere denies that prophets perform miracles and does acknowledge those that are mentioned in revelation.

Al-Ghazālī's view as to what counts as a prophetical miracle also differed markedly from his Ashʿarite predecessors' views. In addition to denying that miracles are sufficiently distinguishable from marvels and sorcery, he also rejected the position that they must be a break in God's habit. This direction of thought again has its roots in al-Juwaynī. According to al-Ashʿarī, a miracle is defined as "a break in [God's] habit that is associated with a challenge which remains unopposed."[118] Although he quotes the traditional Ashʿarite position that prophetic miracles and the wonders (*karamāt*) performed by some extraordinary pious people (*awliyā'*) are "a break in the habit" (*inkhirāq al-'āda*), al-Juwaynī's own position seems to have been more complex. A break in God's habit is indeed a "sign" (*āya*) that can verify a prophet's authenticity. The miracle, however, which al-Juwaynī sees as the only means of verifying prophecy, is no longer described as a break in God's habit but merely as the incapacity of the opponents to respond to the prophet's challenge.[119]

Apart from what he writes in the *Incoherence*, there is no indication that al-Ghazālī ever believed that miracles are a break in God's habit. In his *Balanced Book*, he says that the believer comes to trust the prophet's veracity "through strange things and wondrous actions that break the habits."[120] "Habits" (*'ādāt*)—in plural—seems to refer to the customs of persons or of things in this world, including the habits of the prophets, rather than to God's habit. For example, when the stick is turned into a serpent, the habitual

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behavior of the stick is broken although God had not changed His habit. This usage of the word "habit" (*ʿāda*) is already present in the *Incoherence*, in which the *falāsifa*'s position that the prophet has a more powerful practical faculty in his soul is described as "the special character [of the prophet] differs from the habit of the people (*tukhālifu ʿādat al-nās*)."[121]

There are clear indications that al-Ghazālī believed that although "miracles" are extraordinary and often marvelous events, they do not require God to break His customary habit—the laws of nature. In the thirty-first book of his *Revival*, al-Ghazālī says that God creates all things one after the next in an orderly manner. After making clear that this order represents God's habit (*sunna*), he quotes the Qur'an: "You will not find any change in God's habit."[122] This sentence is quoted several times in the *Revival*; in one passage, al-Ghazālī adds that we should not think that God would ever change his habit (*sunna*).[123] The implication is clear: since God never changes His habit, the prophetical miracle cannot be a break in His habit. It is merely an extraordinary occurrence that takes place within the system of the strictly habitual operation of God's actions. Miracles are programmed into God's plan for His creation from the very beginning, so to speak, and they do not represent a direct intervention or a suspension of God's lawful actions.[124] If this was al-Ghazālī's position about prophetical miracles, and I am quite convinced that it was, he nowhere states it explicitly in any of the core works of the Ghazalian corpus. Here, the Second Approach of the Second Position of the seventeenth discussion of the *Incoherence* remains one of the more explicit expressions of this view.[125]

(p.199) Those who studied with al-Ghazālī or who read his works carefully certainly understood the revolutionary character of his teachings on prophetical miracles. Ibn Ghaylān, the Ghazalian from Balkh, reports with some bewilderment that al-Ghazālī did not oppose the *falāsifa* in their teachings on prophecy and prophetical miracles.[126] Al-Ghazālī's adversaries were more outspoken. In his widely known epistle on why the burning of al-Ghazālī's *Revival* in al-Andalus was justified, al-Ṭurṭūshī complains that regarding prophecy, al-Ghazālī adopted the teachings of the *falāsifa* and particularly those of the Brethren of Purity (*Ikhwān al-ṣafā'*). These philosophers teach, al-Ṭurṭūshī continues, that God does not send prophets; rather, those who develop extraordinarily virtuous character traits acquire (*iktasaba*) prophecy. Al-Ṭurṭūshī is not entirely correct in his characterization of the Brethren of Purity. He is more correct when he says that the *falāsifa* teach that some prophetical miracles are ruses and trickery (*ḥiyal wa-makhārīq*) and that al-Ghazālī agreed with them on this point.[127] Al-Ṭurṭūshī was in close contact with Abū Bakr ibn al-ʿArabi and maybe with other students of al-Ghazālī.

For Avicenna, prophetical insight is caused by the extraordinary character traits of those who become prophets. Prophecy is linked to normal human psychology, and although it is rare, it is indeed a part of the normal course of nature. The origins of Avicenna's teachings on prophecy—and subsequently much of what we find in al-Ghazālī's psychology—lie in the works of Aristotle and his Neoplatonic interpretors, most prominently al-Fārābī.[128] Although the Brethren of Purity shared the Neoplatonic origins

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of al-Fārābī's and Avicenna's teachings, their presentation of psychology and prophecy is less detailed and well developed.[129] Avicenna's detailed explanation of prophecy certainly influences al-Ghazālī's understanding, and he does reproduce many of its features.[130] Future studies must decide whether the Brethren's psychology also significantly influenced al-Ghazālī, or whether the connection between the two merely resulted from parallel methods of teaching that are only roughly similar.

It is true, however, that the Brethren's work expresses certain mystical notions that also appear in al-Ghazālī but are explicitly expressed neither by al-Fārābī nor by Avicenna. Particularly regarding the inspiration that "friends of God" (*awliyāʾ Allāh*) receive—knowledge similar to revelation but at a lower level—the Brethren's ideas are reminiscent of Sufi concepts.[131] The Brethren, for instance, stress that receiving inspiration (*ilhām*) and revelation (*waḥy*) require the soul's purification from the pollutions of the natural world—a motif prominently expressed by al-Ghazālī in his letter to Abū Bakr ibn al-ʿArabī.[132] In general, the presentation of prophecy in the Brethren's *Epistles* shows closer connections among philosophical teachings, Muslim religious discourse, and Qur'anic passages than we see in al-Fārābī's and Avicenna's more theoretical treatments of prophecy. Unlike the two Aristotelians, who only occasionally back their teachings with an exegesis of verses in revelation, the Brethren frequently engage in figurative interpretations of Qur'anic verses. Al-Ghazālī was inspired by some of their suggestions.[133] Among religious intellectuals, the Brethren's close association with Qur'anic motifs may have created more interest in their work than in al-Fārābī's and Avicenna's work. This, in turn, would **(p.200)** make the Brethren of Purity's work more threatening to al-Ghazālī's conservative opponents such as al-Ṭurṭūshī. As he does in his discussion of logics, al-Ghazālī replaced some of the technical language in the psychology of Avicenna with words more familiar to religious scholars that connect more seamlessly to motifs in the Qur'an. Borrowing from Q 38:72, al-Ghazālī frequently uses the word "spirit" (*rūḥ*), where Avicenna would have used the term "intellect" (*ʿaql*).[134] This usage may have made al-Ghazālī's psychological teachings seem closer to those of the Brethren of Purity, who use the term "spirit" frequently, than to those of Avicenna, who uses it only occasionally.

Al-Ghazālī was likely familiar with the *Epistles of the Brethren of Purity*.[135] Some of his cosmological teachings may go back to them, such as equating the heavenly spheres with the "realm of sovereignty" (*ʿālam al-malakūt*) and seeing the human body as a microcosm of the universe.[136] It seems that already during his lifetime, al-Ghazālī was accused of having copied from the *Epistles*. In his autobiography, he implicitly admits that some of his teaching also appear in these treatises, although he denies any influence and argues that the correlation is more or less coincidental. He says that in general, the teachings in the *Book of the Brethren of Purity* (*Kitāb Ikhwān al-ṣafāʾ*)—al-Ghazālī assumes that it was written by a single author—are weak philosophy, based on Pythagoras, and that Aristotle represents a more advanced stage. This work is "the chatter of philosophy" (*ḥashw al-falsafa*), al-Ghazālī adds, and it is false (*bāṭil*). He singles out the *Book of the Brethren of Purity* as an example of a misleading philosophical text, particularly because it aims at appealing to the religious scholars.[137]

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Al-Ghazālī's critics, however, continued to associate his position on prophecy with the Brethren. Al-Māzarī al-Imām (d. 536/1141), a Tunisian contemporary of al-Ṭurṭūshī who wrote a polemic against al-Ghazālī, says some students of al-Ghazālī reported that he "constantly cleaved to the *Epistles of the Brethren of Purity*."[138] Al-Māzarī's polemic is unfortunately lost and known only from quotations in later texts, yet his opinions proved to be quite influential among later opponents of al-Ghazālī. In addition to the Brethren of Purity, al-Māzarī attributes the philosophical influence on al-Ghazālī to Avicenna and to Abū Ḥayyān al-Tawḥīdī (d. 414/1023).[139] More than a hundred years after al-Māzarī and al-Ṭurṭūshī, the Sufi philosopher Ibn Sabʿīn (d. *c.* 668/1270) from Ceuta claimed that the teachings presented in four of al-Ghazālī's works on the human intellect, the spirit, and the soul come from the *Epistles of the Brethren of Purity*.[140]

Authors from the Muslim East also understood that on the subject of prophecy, al-Ghazālī got quite close to the *falāsifa*. Ibn Taymiyya, for instance, chastises al-Ghazālī for having followed the "pseudo-philosophers" (*al-mutafalsafa*) in their view that knowledge of prophecy can be verified without someone having witnessed a miracle.[141] Because of al-Ghazālī's teachings on how the souls of the prophets and of "friends of God" (*awliyāʾ*) receive revelation as inspiration and insight from the heavenly spheres, Ibn Taymiyya saw al-Ghazālī as "from the same ilk as the heretical Qarmatians and the Ismāʿīlites." What is more, he complains, al-Ghazālī and others after him, such as Ibn ʿArabī (d. 638/1240), present these views about prophecy as Sufism and claim that it is a deeper truth.[142] Ibn Taymiyya diligently collected the criticism of earlier scholars on **(p.201)** this matter, reproducing a long passage from al-Māzarī's lost polemic.[143] Earlier, influential Sunni scholars such as Ibn al-Ṣalāḥ al-Shahrazūrī had already spread al-Māzarī's criticism of al-Ghazālī. In his comments on the latter, Ibn Taymiyya rejects al-Māzarī's suggestion that al-Ghazālī had been influenced by al-Tawḥīdī, but he accepts al-Māzarī's view that al-Ghazālī's position on prophecy is based on Avicenna and the Brethren of Purity.[144] After his teachings on the best of all possible worlds, which will be discussed below, later scholars of Islam found al-Ghazālī's views on prophecy to be most objectionable.

Necessary Knowledge in an Occasionalist Universe

In its practical implications and particularly regarding the pursuit of the natural sciences, the occasionalist universe of al-Ghazālī is indistinguishable from the universe of the *falāsifa*. Both cosmologies assume that events in God's creation are predetermined. Both assume that fire *always* makes cotton combust. Both assume that the laws of nature or God's habit will *always* apply. The distinction between al-Ghazālī's type of occasionalism and the position that God exerts control through secondary causality is limited to the cosmological explanation of causal connections. This question belongs to the realm of metaphysics, teaches al-Ghazālī, and should have no influence on how we respond to God's creative activity. If a person is killed by the blow of a sword to his neck, he writes in his *Standard of Knowledge*, our sense perception recognized that death in this person comes "together with" (*maʿa*) the deep cut (*ḥazz*) in his neck. If this conjunction appears repeatedly, we have no doubt that a cut in the neck and death are connected, and we conclude that one is the cause (*sabab*) of the other.[145] Despite this conjunction, some may indeed doubt the connection; a *mutakallim*, for instance, may claim that the cut is not

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the cause of death and that God created the cut and death "side by side" (lit. "in the stream," *ʿinda jarayān*). Al-Ghazālī shows little patience with this *mutakallim*. Would he doubt his son's death were he to receive the unfortunate news that his son has a cut in his neck?

> When it comes to the question whether this is an inseparable and necessary connection that cannot be otherwise or whether this is an arrangement according to the normal course of God's habit (*sunnat Allāh*) through the efficacy of God's pre-eternal will which is not affected by change or alteration, [we say:] the question is about the kind of connection not about the connection itself. This should be understood and it should be known that doubting the death of a person who has received a blow to his neck is pure delusion (*waswās*) and that the conviction (*iʿtiqād*) that he is dead is certain (*yaqīn*) and should not be called into question.[146]

If the occasionalist agrees with al-Ghazālī that God's habit is the result of His pre-eternal will (*mashi'atuhu al-azaliyya*), which "is not affected by change or alteration" (*lā taḥtamilu al-tabdīl wa-l-taghyīr*), the dispute the occasionalist has **(p.202)** with a believer in causality is limited to the type of connection between cause and effect. The existence of a direct efficacy of the cause on the effect cannot be demonstrated. Both must agree, however, that the connection itself is inseparable, meaning that the occurrence of the cause (cut in the neck) is *always* concomitant to the appearance of the effect (death).

Richard M. Frank suggested that for al-Ghazālī, connections between what we call causes and their effects are indeed necessary: "Given the actuality of all causal conditions for its occurrence an event comes to be inevitable (*lā maḥāla*) and by necessity (*ḍarūrat*^{an})."[147] But how, one must ask, can this conclusion be reconciled with the first sentence of the seventeenth discussion in the *Incoherence* in which al-Ghazālī explicitly says that "according to us" (*ʿindanā*), such connections are not necessary? In his *Balanced Book on What-to-Believe,* al-Ghazālī looks at the same example of a person who received a blow to his neck.[148] That volume's discussion is prompted by the question of whether the murderer cut short his victim's lifespan. Al-Ghazālī's goal is to correctly understand the connection between these two events, the murder and the victim's appointed time of death (*ajal*). He discusses three different ways of how things in this world are connected to one another, the third being the connection between a cause (*ʿilla*) and its effect (*maʿlūl*). By way of a general statement, al-Ghazālī says that in our judgment, the connection of these two is necessary: "If there is only a single cause for the effect and if it has been determined that the cause doesn't exist, it follows from it (*yalzamu min*) that the effect doesn't exist."[149] In this book, al-Ghazālī uses the language of classical Ashʿarism. In the case of the man who has received a cut in his neck, cause and effect are accidents that are connected to one another:

> "Being killed" is an expression for a cut in the neck and that is traced back to certain accidents, namely the movement of the hand of him who holds the sword and other accidents, meaning the cleavages among the atoms in the neck of him who is hit. Another accident is connected with (*aqtarana bi-*) these (accidents), and this is death. If there were no connecting link (*irtibāṭ*) between the cut [in the neck]

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> and death, the denial of the cut would not make the denial of death follow. But these are two things that are created together (*maʿan*) and connected according to an arrangement that follows the habitual course and not according to a connecting link that one of the two has with the other.[150]

The position al-Ghazālī takes in this book is distinctly occasionalist. While by themselves the two events are not connected, they are connected through a habit (*ʿāda*). He does not elaborate as to whose habit this is, and his Ashʿarite readers might assume he means God's habit. Yet in real terms, the habit appears to be that of the creatures, not of God. God may create the two events individually and mono-causally, with each one being considered "a thing autonomously created by God" (*amr*^{un} *istabadda al-rabbu*). These two creations, however, always appear together (*maʿan*) and "in a connection according to an arrangement that follows the habitual course" (*ʿalā qtirān bi-ḥukm ijrāʾ al-ʿāda*). **(p.203)** The connection is not of a kind that the first event must be the "generating agent" (*mutawallid*) for the existence of the other. The cut in the neck does not "generate" (*tawallada*) death. Being a cause (*ʿilla*) simply means that, if all other causes of death are excluded, the denial of a cut in the neck makes the denial of death necessary.[151] Cut and death, al-Ghazālī implies, are inseparable, which means the relationship of the corresponding denial of a cut and the denial of death is necessary.[152]

The point al-Ghazālī wishes to make is that in our knowledge, the connection between what we identify as a cause and what we identify as an effect is necessary. Al-Ghazālī uses the Arabic verb *lazima* and its derivates, which indicate both an inseparable connection and a necessary judgment. What we witness is the pure concomitance of two events, grounded in a habit. Al-Ghazālī argues against an understanding of occasionalism that assumes God will break His habit. That, he implies, will not happen. Yet al-Ghazālī needs to be read closely: he nowhere says that the connection between the two events is necessary. He says only that the way our judgment connects these two events is necessary. Here he implicitly reiterates a point already made in the *Incoherence*: necessity is a predicate of human judgments, not a predicate of the outside world.[153] In this passage, the necessary connection is said to exist as a human conviction (*iʿtiqād*):

> He who is convinced (*iʿtaqada*) that the cutting of the neck is a cause (*ʿilla*) of death, and who connects this conviction to his observation that the body of the deceases is sound and that there are no other outside perilous forces involved, is convinced that the denial of the cut and the denial of any other possible cause necessarily means the denial of the effect, because all causes are denied.[154]

In this case, we conclude necessarily that the person whose body we inspect is not dead. To be convinced that there are imminent causes in this world does not mean to say, however, that these causes have a real efficacy toward their supposed effects. Here in his *Balanced Book on What-to-Believe*, al-Ghazālī compares the explanations of causal connection provided (1) by those who posit causality (*ʿinda qāʾilīna bi-l-ʿilal*) and (2) by those of the Sunnis (*ahl al-sunna*) who are convinced that God "is autonomous in the original creation [of events]" (*mustabidd*^{un} *bi-l-ikhtrāʿ*) and does not allow other creatures to generate (*tawallad*) anything. He says that these two explanations do not

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differ regarding the conclusions we draw from observing causal connections. Yet on the level of cosmology, there is still a conflict between these positions that is "lengthy," and "most people who plunge into it do not realize its divisive character (*mithāruhā*)." Al-Ghazālī has no interest in engaging with that conflict. Regarding questions as to whether the cutting of the neck causes death or not, he recommends resorting to a simple rule (*qānūn*): one must avoid assuming that something could be generated (*tawallada*) by anything other than God. God creates everything, and in the case of the killed human, it is best to say: what really killed him was the end of his appointed lifespan (*ajal*).[155]

(p.204) Despite its openly occasionalist language, even in his *Balanced Book,* al-Ghazālī shows no signs that he committed himself exclusively to an occasionalist cosmology. He stresses that the Muʿtazilite explanation of physical events through "generation" (*tawallud*) is wrong. Events in the created world do not simply "generate" from other created beings and certainly not from human decisions. Yet here, as in most of his works, al-Ghazālī wishes to leave open whether these events are created directly by God or are the results of secondary causes. Given that his target readership tends toward the former position, he has no problem stating his position in a language that they will find easy to adopt.

Concomitant Events and Rational Judgments

Al-Ghazālī regarded the reliance on atomism and occasionalism as a viable method to explain God's creative activity, and in some of his works such as the *Balanced Book on What-to-Believe* he succeeds in these explanations. This book was likely written as a textbook of Ashʿarite *kalām* to be used by students at the Niẓāmiyya madrasa in Baghdad. *The Revival of the Religious Sciences*, which al-Ghazālī started composing after he had left the Niẓāmiyya in Baghdad, does not have as distinct a target readership. In this book, al-Ghazālī is not quite as committed to the occasionalist language of the Ashʿarite *mutakallimūn*. Although some books in the *Revival* do use that terminology, most are cast in a more advanced language that tries to give equal justice to both occasionalism and secondary causality. On first reading, these texts appear to employ a distinctly causalist language. At the beginning of the thirty-fifth book, for instance, which discusses belief in God's oneness (*tawḥīd*) and trust in God (*tawakkul*), the author explains the difficulties of developing deep confidence in the reliability of God's habit. Trust in God is difficult to comprehend because many people look exclusively at the causes (*asbāb*) of things, rather than see God's activity. Yet it is wrong to think that causes could stand on their own. This difficulty is expressed in an ambiguous sentence in which al-Ghazālī evidently wishes to remain uncommitted about the true nature of causes. However, he does want to make his readers understand that the common word "cause" (*sabab*) does not mean an independent or absolute efficient cause:

> Basing oneself on the causes (*asbāb*) without viewing them as "causes" (*asbāb*) means to outsmart rationality and plunge into the depths of ignorance.[156]

These "causes" can be either secondary or just an expression of the habitual concomitance of God's immediate creative activity. In neither case do they have independent agency. To assume such independent agency would be the gravest mistake

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one could make with regard to causes, akin to bringing "polytheism into the idea of God's unity" (*shirk fī l-tawḥīd*). Then again, completely disregarding the causes, defames the Prophet's *sunna* and slanders his revelation (*ṭaʿn fī l-sunna wa-qadḥ fī l-sharʿ*). Qur'an and prophetical *ḥadīth*, al-Ghazālī implies, discuss causes as if they have real efficacy. To understand the **(p.205)** true meaning of trust in God, one must balance the conviction that there is only one agent or efficient cause in this world (*tawḥīd*) with rationality (*ʿaql*) and with revelation (*sharʿ*).[157]

Rationality and revelation are the two pillars of verifiable human knowledge. Neither of them provides a decisive answer as to which of the two competing explanations of God's creative activity is correct. Al-Ghazālī implies that neither the Qur'an nor the *ḥadīth* provides a clear statement in favor of either position. This indecisiveness also applies to rationality: in the seventeenth discussion of the *Incoherence*, he aims to show that there is no demonstration that proves the direct and immediate character of the connection between a cause and its effect. These effects may be determined by secondary causes, or the concomitance of them may be determined by God's habitual course of action as he creates each event individually, one by one.

A critical reading of al-Ghazālī must be aware of these ambiguities. If he says that two things are created "side by side" (*ʿalā l-tasāwuq* or *ʿinda jarayān*), this may be due to their being a cause and its effect in a causal chain that has its beginning in God or due to God's immediate arrangement. If things have a "connection" (*iqtirān*) or if there is a "connecting link" (*irtibāṭ*) between two things, their relationship may be either determined by laws of nature or due to God's habitual course of action. Even if something is called a "cause" (*sabab*), the reader of al-Ghazālī cannot be certain that this means "secondary cause." According to al-Ghazālī, this is just the way we talk about our environment, and it would be unwise to jump to conclusions about the cosmological character of the "causes." From this perspective, it is unsurprising that in the great majority of his works, al-Ghazālī promotes a naturalist understanding of "causes." Fire causes ignition, bread causes satiety, water quenches thirst, wine causes inebriety, scammony loosens the bowels, and so forth. The same naturalist understanding applies to the effective existence of natures (*ṭabāʾiʿ*). "A date stone," al-Ghazālī acknowledges in the twenty-second book of the *Revival*, "can never become an apple tree."[158]

In his two works on logics, the *Standard of Knowledge* and the *Touchstone of Reasoning in Logics*, al-Ghazālī discusses how we acquire knowledge of causal connections. Here the nominalist underpinnings of his epistemology become evident. Causal connections are understood through experience or experimentation (*tajriba*). Experimentation represents one of five different means for acquiring certain knowledge, the other four being *a priori* concepts (*awwaliyyāt*), inner sense perceptions (*mushāhadāt bāṭina*), outer sense perception (*maḥsūsāt ẓāhira*), and knowledge that has been reliably reported on other people's authority (*maʿlūmāt bi-l-tawātur* or *mutawātirāt*). In addition to these five sources of certain knowledge (*ʿilm yaqīnī*), there are also types of knowledge that cannot be sufficiently verified and can thus never be used as premises in demonstrations. These are either judgments that immediately appear to be true but that

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are unverifiable (*wahmiyyāt*) such as "all existence is spatial" or "beyond the boundaries of the world is no vacuum" or notions that are commonly accepted by the majority of the people (*mashhūrāt*), yet verifiable only through other sources, such as judgments about which human actions are morally good or bad.[159]

(p.206) Al-Ghazālī lists numerous examples of how experience can produce certain knowledge about causal connections. They cover the full range of what is considered causality: fire burns, bread leads to satiety, water quenches thirst, hitting an animal causes it pain, a cut in the neck causes death, and scammony has a laxative effect on one's bowels.[160] These judgments are different from sense perception, al-Ghazālī explains, as they express universal judgments rather than merely individual observations of isolated events. Universality cannot be produced solely by the senses, but it rather must be formed in the human rational capacity (*'aql*). Such judgments of experience (*mujarrabāt*) must be based on the repeated sensation of single events in our sense perception.[161] They are a combination of sense perception and rational judgment. Consistent with his criticism in the *Incoherence* that necessity is a predicate of judgments and not of things in the outside world, al-Ghazālī highlights that the universal necessity of these judgments cannot be wholly taken from the outside world. The necessity and universality is due to a "hidden syllogism" (*qiyās khafī*) that combines the multitude of observations into a single judgment. Al-Ghazālī admits, however, that the reason why we acquire certain universal knowledge, rather than just probable or false knowledge, still remains unknown. All we can say is that experience imposes (*awjaba*) upon us either a decisive judgment (*qaḍā' jazmī*) or one that we consider valid for the most part (*aktharī*), and that this is by means of a "hidden syllogistic power."[162] This power works on our minds in an inescapable way. In his *Touchstone of Reasoning,* al-Ghazālī gives an example of this hidden syllogistic power:

> If someone who has a painful spot [on his body] pours a liquid over it and the pain goes away, he will not acquire knowledge that the liquid has stopped [the pain] because he will account the disappearance of pain to coincidence.[163] This is similar to when someone reads the Sura "Devotion" (Q 112) once over such a spot and the pain disappears. He would get the idea that the disappearence of [pain] appears by coincidence. If the pain disappears repeatedly [after reading the sura] and on many occasions, however, he acquires knowledge [about such a connection]. Thus, if someone tries it out and reads the sura "Devotion" once the first signs of the illness appear, and every time—or at least in the majority of cases—the pain vanishes, he acquires certain knowledge that [reading the sura "Devotion"] is something that makes the pain vanish, just as he has acquired certain knowledge that bread makes hunger vanish and dust does not make hunger vanish but actually increases it.[164]

Al-Ghazālī invites his readers to consider a situation in which the recitation of the sura "Devotion" (*al-Ikhlās.*) and the vanishing of pain at a certain spot repeatedly appear in conjunction. In such a situation we will conclude, he argues, that there is a connection between the two events. What makes us establish such a judgment is not a real causal

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connection between the two events but simply their concomitant appearance, which is indeed a connection, although not necessarily a causal one.[165] The knowledge that we acquire, however, is **(p.207)** that reading the sura causes the pain to go away. Knowledge about what we regard as causal connection is acquired by seeing an inseparable relationship (*talāzum*) between two events and the consecutive and habitual pattern (*iṭṭirād al-ʿādāt*) of their conjunction.[166]

Judgments about causal connections are universal (*qaḍāyā ʿumūmiyya*) and apply to all individuals within a certain species (*jins*). They cannot be attained though sense perception alone, as sense perception (*ḥiss*) can only produce judgments about individual objects (*ʿayn*). All universal judgments that we do not accept from revelation are either *a priori* and primordial or must rely on a syllogism; in the case of experience, the syllogism is hidden and not conscious:

> If you look closely into this you will find that the intellect (*al-ʿaql*) attains these judgments after some sense perception and after their repeated occurrence through the mediation of a hidden syllogism (*qiyās khafī*) that is inscribed in the intellect. The intellect has no cognitive perception (*shuʿūr*) of that syllogism because it does not attend to it and it does not form it in words.[167]

In the First Position of the seventeenth discussion of the *Incoherence*, al-Ghazālī makes his major point on this subject, namely, that without this hidden syllogism, human perception cannot come to universal judgments, including universal judgments about causal connections. In his *Touchstone of Reasoning,* he reminds his readers:

> We have mentioned in the *Book of the Incoherence of the Philosophers* that which alerts [the readers] to the depth of these matters. The gist is that the judgments acquired through experimentation (*al-qaḍāyā l-tajribiyya*) go beyond sense perception.[168]

What exactly makes the judgments of experience go beyond sense perception is not clear: "We cannot say what is the cause (*sabab*) in reaching the perception of this certainty after we know that it is certain."[169] Consequently, the hidden syllogism is nowhere clearly explained. It comes to the fore when a connection between two individual sense perceptions appears so frequently that it cannot be explained as a coincidence. Again in the *Touchstone of Reasoning* he writes:

> The intellect usually says: Were it not for the fact that this cause leads to its [effect], [the effect] would not continuously occur for the most part; and if [the effect] happened by coincidence it would appear [sometimes] and [at other times] not. Consider someone who eats bread and later has a headache while his hunger has gone away. He concludes that the bread satisfies hunger and does not cause the headache because there is a difference between these two effects. The difference is that the headache appears on account of another cause whose connection with the bread is coincidental. Because if it came about through (*bi-*) the bread, [the effect] would appear always together (*maʿa*) with the bread or for the most part,

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like satiety.[170]

(p.208) The continuous appearance of one event together (*maʿa*) with the other makes us conclude that the one is the cause of the other. It is worth noting that al-Ghazālī's treatment of experience sees the connections expressed by our judgment as necessary and constituting certain knowledge, even if the underlying sense perceptions concur only "for the most part." There can be no doubt that these kinds of judgments qualify for al-Ghazālī as certain knowledge, despite their nearly-but-not-universal occurrence.[171] In his autobiography, for instance, al-Ghazālī says that the experience (*tajriba*) of the positive effects of a prophet's work on one's soul generates necessary knowledge (*ʿilm ḍarūrī*) of his prophecy.[172] In this case, the judgment of experience is established by the repeated concomitance between performing the Prophet's ritual prescriptions and the positive effects this practice has on one's soul. That resulting judgment, namely, that Muḥammad can effectively heal the soul through his revelation, establishes certainty about prophecy (*yaqīn bi-l-nubuwwa*) and results in belief that equals the power of knowledge (*al-īmān al-qawī l-ʿilmī*).[173]

For al-Ghazālī, the fact that two events always appear together or do so for the most part implies that their concomitance is not coincidental. Once we are convinced that we are not dealing with coincidence, our mind moves toward a necessary judgment about the one being the cause of the other. Talking about the individual sense perceptions that lead to this judgment, al-Ghazālī says that "the cause and the effect always are inseparable (*yatalāzimān*) and if you want you can say 'cause' (*sabab*) and 'effect' (*musabbab*) or if you want you can say 'necessitator' and 'necessitated.'"[174]

Experience (*tajriba*) in Avicenna and in al-Ghazālī

In al-Ghazālī's epistemology, experimentation (*tajriba*) establishes necessary knowledge about causal connections solely from the repeated concurrence of two events. This method stands in striking contrast to the Aristotelian view of how we know about causal connections. In Avicenna's thought, as in most Aristotelian theories of the sciences, the majority of causal connections are the results of active and passive powers in the essences of the cause and the effect. The passive power (*quwwa munfaʿila*) of flammability, for instance, is an essential attribute of cotton that is implied by the fact that it is the product of a plant. All plants and their products are flammable. Equivalently, fire has in its essence the active power (*quwwa fāʿiliyya*) of burning. Once the two come together, inflammation must occur due to the essential nature of these two things. According to Aristotle, we know these essential qualities by witnessing these characteristics in the outside world *and* subsequently inducing their essential nature from the universal forms of cotton and fire. The necessary judgment that "fire burns cotton" is reached not by "experience" (Greek *empeiría*, Arabic *tajriba*) but by "induction" (Greek *epagôgé*, Arabic *istiqrāʾ*). In this case, the human intellect observes a certain process and reaches a necessary conclusion through the assistance or mediation of the separate active intellect when it imprints or illuminates the forms of fire and cotton in the human **(p.209)** intellect.[175] That fire has the active power of burning and cotton the passive power of inflammability can only be known through the mediation of the active

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intellect.[176] We first need to receive the intelligible universal forms of "fire" and "cotton" from the active intellect before we conclude that fire necessarily inflames cotton.

In Avicenna, the individual particulars of a thing are perceived by the senses and stored in the faculty of imagination (*khayāl*). The "light of the active intellect shines upon the particulars" in imagination, and the intelligible universal forms "flow upon" (*yafīḍu ʿalā*) the human soul. The intelligible universal forms are "abstracted" (*mujarrad*) from individually perceived particulars "through the mediation of illumination by the active intellect."[177] In Avicenna, like in Aristotle, the source of our knowledge of the essential active and passive powers of things is not nature and its observation but the separate active intellect. Sensual perception, Avicenna teaches, cannot lead to necessary judgments.[178] It is important to note that induction only works if the active and passive powers that lead to causal connections are part of the essences of the things.[179]

When the active and passive powers that necessitate the causal connection are not part of the essences of the things, Avicenna mandates the use of experimentation (*tajriba*). An example that Avicenna and al-Ghazālī both mention is that in medicine, we witness that scammony causes purgation in the gallbladder. According to Avicenna, the relationship between scammony and the purgation of bile is not due to an active power that is part of the essence of scammony. Rather, the effect is due to an "inseparable accident" (*ʿaraḍ lāzim*) or a proprium (*khāṣṣa*) of scammony, meaning an accident that inheres permanently and is therefore an inseparable part of it.[180] Since the cause of this laxative effect is an accidental characteristic, we cannot know it through induction (*istiqrāʾ*). In this case, experimentation (*tajriba*) leads us to conclude that the accident of causing this laxative effect inheres in scammony. The repeated observation of this connection establishes that there is something either in scammony's nature or just "with it" (*maʿahu*) that causes—at least in our lands, Avicenna adds—purgation of bile.[181]

An important aspect of Avicenna's theory of experience is that it establishes universal judgments not only when the relationship is always ($dāʾim^{an}$) observed, but also even in cases in which we only observe that relationship in most cases ($akthariyy^{an}$). The force of necessity in our judgments is considered a syllogism (*qiyās*). "There is a syllogism," Avicenna says, "that is produced in the mind without being perceived."[182] The syllogism, however, is merely the way that the necessity of the judgment is expressed; it cannot be the source of the necessity. In fact, it is not entirely clear what precisely justifies the epistemological leap from an observation of events that likely indicate a relationship to the necessity of a syllogism.[183] Experimentation in Avicenna seems to be based on the underlying assumption that when two things repeatedly happen together, they do so either due to chance or due to necessity. When the two things are just as likely to happen together as not to happen, the repeated observation that they *always* happen together, or in the great majority of cases, **(p.210)** justifies the conclusion that they do not happen together by chance ($ittifāq^{an}$).[184] They therefore happen together due to some necessity.

In Avicenna's view, experimentation informs us *that* scammony has a purging effect, yet it

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does not allow us to conclude *how* this effect occurs. Unlike induction, it does not provide the underlying causal explanation. Experience thus does not provide scientific knowledge (Greek *episteme,* Arabic *ʿilm*) in the strict Aristotelian sense of it being both necessary *and* explanatory.[185] In addition, Avicenna admits that because of its shaky epistemological basis, experimentation does not provide "absolute syllogistic knowledge" but only "universal knowledge that is restricted by a condition."[186] This condition is the methodologically sound application of the judgment. When using experimentation, the scientist must record the variables and background conditions surrounding the observations. Only when experimentation is conducted in this careful way can one be certain that there is a necessary relation between the two events in question. This method often forces the scientist to limit his or her results to the conditions he or she observed, such as when Avicenna says that scammony has the observed effect "in our lands."[187] Limitations, such as the acknowledgment that scammony may not have its purging effect in other climates, are very important in Avicenna's theory of experience. They are a result of the fact that we are only dealing with a cause that is an accident in scammony, and not a part of its essence.[188] Even if all methodological conditions are fulfilled, Avicenna notes, experience is no safeguard against error; and in his work, he further discusses likely mistakes when pursuing experimentation.[189] Nevertheless, experience can provide certain knowledge, albeit of a limited kind.[190]

For Avicenna, experimentation becomes much more important than for earlier Aristotelian theories of knowledge because he believed that induction (*istiqrāʾ*) should always be combined with experience (*tajriba*). At the end of his discussion of experience, Avicenna admits that even induction (*istiqrāʾ*)—usually considered a stronger and more reliable source of knowledge that experimentation—relies on experimentation. Comparing the results of sense perception, of induction, and of experimentation, Avicenna says that unlike sense perception, which just produces individual observations, induction and experimentation both produce universal knowledge. By itself, however, induction produces no more than an "overwhelming assumption" (*ẓann ghālib*), which is not knowledge. The result of induction must be combined with experimentation in order to produce a universal judgment that is not limited by any conditions. Studying nature's connections through experimentation (*tajriba*) is part of the process of obtaining truly universal knowledge from the active intellect. Avicenna says that experimentation is "more reliable" (*ākad*) than induction, and while induction by itself cannot produce certain universal knowledge, experimentation can.[191] By itself, however, experimentation produces universal knowledge, whose universality is limited by the conditions of the underlying observations, meaning, for instance, it is valid where observed, though not necessarily elsewhere.[192]

Jon McGinnis argues that in Avicenna's critique of induction, he moves from a pure Aristotelian position of how we have knowledge of causal connections **(p.211)** toward the direction of a more modern epistemology where causal connections are not learned from the universal forms of the active intellect.[193] Avicenna's follower al-Ghazālī went much further on this path. In al-Ghazālī's discussion of the sources of human knowledge, there is a trace of neither induction (*istriqrāʾ*) nor the apprehension from the active

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intellect of the essential characteristics of things. This epistemology is consistent with al-Ghazālī's nominalist criticism of Avicenna's position on causality. Al-Ghazālī does not distinguish between fire burning cotton or scammony producing a laxative effect: both are examples of a singular type of causal connections. Subsequently, al-Ghazālī does not distinguish between active and passive powers that are either rooted in the essence of things or formed by their concomitant accidents. In fact, al-Ghazālī nowhere mentions the existence of active and passive powers in things.

Causal connections are, for al-Ghazālī, merely the repeated conjunction of two events. Witnessing such events, our rational capacity (*ʿaql*) produces necessary judgments about these connections. Al-Ghazālī's treatment of experience relies heavily on that of Avicenna. The judgments of experimentation (*al-tajribiyyāt*), Avicenna says, "are matters [in the mind] to which credence is given from the side of sense perception through the assistance of a hidden syllogism (*qiyās khafī*)." We have already seen that in al-Ghazālī, the universal judgments provided by experimentation rely on a sequence of sense perceptions in which the connection has been observed either constantly or only for the most part. In both cases, the judgments consist of two elements: the repeated observation that two events occur together and a hidden syllogistic force (*quwwa qiyāsiyya khafiyya*) that merges many observations into one. Like Avicenna, al-Ghazālī also requires experience to be pursued with a certain degree of rigidity. The data from sense perception must be gathered by sound sense organs when the object is close to the senses and when the medium between the senses and its object is dense.[194]

In a long sentence, al-Ghazālī describes the whole process of acquiring knowledge about causal connection through experience, taking account of all aspects of our judgments that two events are causally connected:

> If the [repeated concurrence of two events] were coincidental or accidental and not inseparable (*lāzim*), it would not continue to occur for the most time without variation; so that even if the event that is inseparable (*lāzim*) [from a first event] has not come into existence, the soul (*nafs*) regards the delay of [the second event] from the first as a single occurrence or one that happens rarely ($nādir^{an}$), and it would search for a cause (*sabab*) that prevented the [second] event from occurring.
>
> If the individual sense perceptions that occur repeatedly one time after the other are brought together, and the number of occurrences cannot be determined, like the number of authorities (*mukhbir*) in a securely transmitted tradition (*tawātur*) cannot be determined, and if each occurrence is like an expert witness, and if the syllogism (*qiyās*) **(p.212)** that we mentioned above is combined with it, then the soul grants assent.[195]

In this context, the fact that the soul "grants assent" (*ʿanat al-nafs li-l-taṣdīq*) to the judgment means that the necessity of the connection is established, and it can be used as a premise in demonstrative arguments. If conducted in the right way, experience produces universal and certain knowledge of *all* kinds of causal connections. Unlike

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Avicenna, al-Ghazālī does not limit the validity of these judgments to certain regions or lands, for instance, or to other circumstances.

It would be false to say, however, that for al-Ghazālī, causal connections are mere mental patterns without correspondence in the real world. The apparent regularity of the connection between what we call a cause and its effect justifies the judgment that scammony causes loosening of the bowels. Although there may be no true causal efficacy on the side of scammony, the regularity of two concomitant events triggers our judgment of causes and effects.[196] Unlike Avicenna, al-Ghazālī never mentions a concomitant laxative accident in scammony, and on some level he pleads ignorant as to whether it really exists. In his cosmology he remains uncommitted to scammony's agency on the loosening of the bowels. The causal inference, however, is not just something the mind puts into the world. The outside world is evidently ordered in a way *as if there were* causal connections. Although the true cause of the regularity of concomitance is uncertain, the fact that they appear together is certain.

Following Avicenna's terminology, however, it would not be correct for al-Ghazālī to say that necessity is solely a feature of our judgments. Necessity, which for Avicenna is identical with temporal permanence, exists when two things *always* appear together; and the latter fact is not denied by al-Ghazālī. Al-Ghazālī's criticism of causality in Avicenna breaks with the statistical interpretation of modal concepts and applies a view of necessity based on the denial of synchronic alternatives. Both agree that the connection between a cause and its effect appears always. For Avicenna, this is synonymous to saying it is necessary. Al-Ghazālī, however, points out that whereas the causal connections we witness in the outside world will always appear in past, present, and future, God could have chosen an alternative arrangement. The possible existence of an alternative means that the connection in the outside world is not necessary.

Making truly necessary connections that allow no alternatives is, according to al-Ghazālī, solely a feature of the human rational capacity (*ʿaql*). Logic is the domain where this rational capacity is applied in its purest form. Al-Ghazālī openly endorsed the logic of the Aristotelians, favoring it over that of the *mutakallimūn*.[197] Averroes and Richard M. Frank questioned how al-Ghazālī could claim to adhere to Aristotelian logic while also subscribing to a cosmology that believes the connection between a cause and its effect is not necessary.[198] In the Aristotelian understanding of logics, the connection between the two premises of a syllogism and its conclusion is that of two causes that are together sufficient and necessary to generate the conclusion. More precisely, it is the combination of the truths of the two premises that causes the conclusion to be true. In the *Touchstone of Reasoning*, a textbook of Aristotelian logics **(p.213)** written for students in the religious sciences, al-Ghazālī shares this position. Michael E. Marmura suggested that here, as in other works where he defends Aristotelian logics, al-Ghazālī reinterprets the demonstrative method alongside occasionalist lines without this affecting either the formal conditions that logics must satisfy or its claim for attaining universal certainty.[199] For al-Ghazālī, therefore, the seemingly causal connection between the premises of a syllogism and its effect is just one of those cases where an event, namely, the combination

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of two true premises, regularly appears concomitantly with another event, namely, the truth of the conclusion. After explaining that any kind of proposition can form the premise of a syllogism, he clarifies in his *Standard of Knowledge* how the conclusion is derived:

> Therefore, those cognitions that are verified and that one has granted assent to are the premises of a syllogism. If they appear (*ḥadara*) in the mind in a certain order, the soul (*nafs*) gets prepared for the [new] knowledge to comes about (*yaḥduthu*) in it. For the conclusion comes from God.[200]

We regard the connection between the premises of a syllogism and its conclusion as necessary. Were we not, we could have no trust in rationality and would have to conclude it is mere conjecture. The connection between the premises and the conclusion is of the same kind as the connection that exists between causes and their effects in the outside world. Our assumption about the necessary character of the syllogistic connections in our mind suggests that all causal connections should indeed be considered necessary.[201] This is, in fact, al-Ghazālī's position. In all contexts where the cosmological or epistemological aspects of causal connections are irrelevant, he assumes that *for us* causal connections are necessary. At no point, however, does he call the connection that exists as such between the cause and its effect necessary. Only human judgments about the connections are necessary. Consistent with his criticism in the seventeenth discussion of the *Incoherence,* al-Ghazālī does not assume that causal connections in the outside world are necessary. While they will always happen just as they happen now, they are subject to God's will and thus can be different if He decides to change His arrangement—which we know He never will. **(p.214)**

Notes:

(1) . Al-Ghazālī, *Iḥyā'*, 4:305.4–5 / 2494.5–6.

(2) . On the subject of efficient causality, Ockham taught that the necessity of the connections between the cause and its effect cannot be demonstrated. Nevertheless, he considered the necessity of this connection to be present in human knowledge. See Adams, *William Ockham*, 2:741–98. On his modal theory, see Knuuttila, *Modalities in Medieval Philosophy*, 145–57.

(3) . Al-Ghazālī, *Tahāfut*, 74.11–75.4 / 44.12–18.

(4) . Ibn Sīnā, *al-Shifā', al-Manṭiq, al-Burhān*, 44.11–12; *al-Najāt*, (ed. Dānishpazhūh) 169–70. The passage is missing from Ṣabrī al-Kurdī's edition of Ibn Sīnā's *al-Najāt*.

(5) . See below pp. 205–12. On nominalist tendencies in Ibn Sīnā, see McGinnis, "Scientific Methodologies in Medieval Islam," 325–27.

(6) . Al-Ghazālī, *al-Maqṣad*, 15–59; see Gätje, "Logisch-semasiologische Theorien," 162–68.

(7) . See for instance, the parable of the "inquiring wayfarer" in the thirty-fifth book of the

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Ihyā', in which the "pen," that is, the active intellect, "writes" knowledge on the "spread-out tabled" in the human soul (*Iḥyā'*, 4:310.22–312.1 / 2502.12–2504.3). On this parable, see below, p. 219. There are numerous distinctly "realist" comments in the works of al-Ghazālī, such as in the first book of the *Iḥyā'*, 1:120.7–16 / 148.5–16, in which he says that knowing is effectively "remembering" (*tadhakkur*) the forms or ideas that humans are taught in their primordial disposition (*fiṭra*). See also a passage in his *al-Mustaṣfā*, 1:80.7–8 / 1:26.12: "(…) therefore the [human] intellect can be compared to a mirror in which the forms of the intelligibles are imprinted according to how they really are (*'alāmā hiya 'alayhā*), and I mean by 'forms of the intelligibles' their essences (*ḥaqā'iq*) and their quiddities (*māhiyyāt*)." Or the *Mishkāt al-anwār*, 67.15–6 / 153.3–4: "If there are in the world of sovereignty luminous, noble, and high substances, which are referred to as 'the angels,' from which the lights emanate upon the human spirits (…)."

(8) . Ibn Rushd, *Tahāfut al-tahāfut*, 531.11–13; English translation by van den Bergh, *Averroes' Tahafut*, 1:325: "Knowledge" always implies truth—falsehood is not considered knowledge."

(9) . *bi-mujarradi l-qudra min ghayri wāsiṭa aw bi-sababin min al-asbāb*; al-Ghazālī, *Tahāfut*, 369.5 / 222.6–7.

(10) . Ibid., 369.6–370.1 / 222.7–14.

(11) . Ibid., 13.10–12 / 7.17–19.

(12) . Abrahamov, "Al-Ghazālī's Theory of Causality," 91.

(13) . Strauss, *Persecution and the Art of Writing*, 68–74.

(14) . Gairdner, "Al-Ghazālī's Mishkāt al-Anwār and the Ghazālī Problem," 153.

(15) . On esoteric and exoteric writing in al-Ghazālī (though with little reference to the question of his cosmology), see Lazarus-Yafeh, *Studies*, 349–411.

(16) . Frank, *Creation and the Cosmic System: Al-Ghazâlî & Avicenna.* Frank presents these results first in his article "Al-Ghazālī's Use of Avicenna's Philosophy." Later, in his "Currents and Countercurrents," 126–34, he revisits the subject again and adds new insights.

(17) . Cf. Frank's own synopsis of his conclusions in his *Al-Ghazālī and the Ash'arite School*, 4.

(18) . Frank, *Creation and the Cosmic System*, 86.

(19) . Frank, *Al-Ghazālī and the Ash'arite School*, 87.

(20) . Ibid., 31–37. Frank is highly critical of al-Ghazālī's ability—or willingness—to express himself clearly. On certain subjects, al-Ghazālī "fudges the issue (…) in a fog of traditional

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language," "tends to weasel," "buries the real issue under a cloud of dialectical obfuscation," and offers "somewhat inconclusive rigmarole" (Frank, *Al-Ghazālī and the Ash'arite School*, 49, 89–90). Frank's analysis of al-Ghazālī's language has been criticized by Ahmad Dallal in his "Ghazālī and the Perils of Interpretation," 777–87. Dallal sees a certain philological sloppiness in Frank's treatment of al-Ghazālī's texts that jumps to preconceived and often untenable conclusions.

(21) . Marmura, "Ghazali and Demonstrative Science"; idem, "Al-Ghazālī's Second Causal Theory in the 17th Discussion of the Tahāfut"; and idem, "Al-Ghazālī on Bodily Resurrection and Causality in Tahafut and the Iqtisad."

(22) . Marmura, "Ghazālian Causes and Intermediaries," 92–93.

(23) . Craig, *Kalām Cosmological Argument*, 45–46; repeated in idem, *The Cosmological Argument*, 101. The position of Craig and Marmura was generally accepted up to 1992.

(24) . Marmura, "Ghazālian Causes and Intermediaries," 89.

(25) . Ibid., 91, 93–97, 99–100.

(26) . Marmura, "Ghazali's Chapter on Divine Power in the *Iqtiṣād*."

(27) . In *Tahāfut*, 78.4–7 / 46.9–12, al-Ghazālī mentions *Qawā 'id al-'aqā'id* as the title of the book that affirms the true teachings (*ithbāt madhhab al-ḥaqq*). *Qawā'id al-'aqā'id* is the title of the second book of the *Iḥyā'*. The first part of that book also circulates in manuscripts as an independent work under this title. Marmura, "Ghazali's *al-Iqtisad fi al-i'tiqad:* Its Relation to *Tahafut al-Falasifa* and to *Qawa'id al-Aqa'id*," makes the convincing case that the title *Qawā'id al-'aqā'id* in the *Tahāfut* refers, in fact, to *al-Iqtiṣād fī l-i'tiqād*.

(28) . Marmura, "Ghazālian Causes and Intermediaries," 96.

(29) . Marmura, "Ghazali and Demonstrative Science," 193.

(30) . Marmura, "Ghazālian Causes and Intermediaries," 97.

(31) . Marmura, "Ghazali's Attitude to the Secular Sciences," 100.

(32) . Marmura, "Ghazali and Ash'arism Revisited," 93, 108.

(33) . Marmura expressed that explicitly ("Ghazali and Demonstrative Science," 183); Frank never considered that option as far as I can see.

(34) . Frank, *Al-Ghazālī and the Ash'arite School*, 3, 100–101. Marmura believes this is available in *al-Iqtiṣād fī l-i'tiqād*.

(35) . Frank, *Al-Ghazālī and the Ash'arite School*, 4, 29, 87, 91.

(36) . *kilāhumā mumkināni 'indanā*; see above pp. 178–9.

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(37) . Marmura, "Al-Ghazālī's Second Causal Theory," 86, 96–98, 101–7; idem, "Ghazali on Bodily Resurrection and Causality," 50, 59–65.

(38) . McGinnis, "Occasionalism, Natural Causation and Science in al-Ghazālī."

(39) . Marmura, "Ghazali's Second Causal Theory," 97.

(40) . Al-Ghazālī, *Tahāfut*, 279.2 / 171.8; 279.11 / 171.16; 289.4–5 / 176.15.

(41) . Ibid., 283.9–285.6 / 173.16–174.14.

(42) . Ibid., 376.7–10 / 230.6–9.

(43) . Ibid., 279.2 / 167.8–9.

(44) . Ibid., 96.11–97.1 / 56.1–3.

(45) . Ibid., 98.1–2 / 56.16–7.

(46) . Gyekye, "Al-Ghazālī on Action," 90.

(47) . *maʿa l-ʿilmi bi-l-murādi* and *huwa ʿālimun bi-mā arādahu*; al-Ghazālī, *Tahāfut*, 96.11–12 / 56.2–3; 100.2–3 / 58.1–2.

(48) . Al-Ghazālī, *al-Iqtiṣād*, 87.*ult*.–88.2; Marmura, "Ghazali's Chapter on Divine Power," 304; Druart, "Al-Ghazālī's Conception of the Agent," 437.

(49) . Al-Ghazālī, *al-Munqidh*, 23.11–13.

(50) . The suggestion that al-Ghazālī developed his views on this subject is not truly convincing. Al-Juwaynī, *Irshād*, 110.3, had already clarified that there is only one agent in this world, which is God.

(51) . Gyekye, "Al-Ghazālī on Action," 84–88, reviews the arguments and discusses their philosophical underpinnings.

(52) . Al-Ghazālī argues that in comparison to animate beings, inanimate ones are called agents only by way of metaphor (*Tahāfut*, 98.13–99.6 / 57.8–14); this argument stands mute in light of his whole œuvre, since in the *Iḥyā'*, he makes clear that even animate beings cannot be considered agents in the true sense of the word. Here he says that calling a human an agent is only by means of a metaphor (*Iḥyā'*, 4:320.12–16 / 2516.4–9).

(53) . Sabra, "*Kalām* Atomism as an Alternative Philosophy," 207–9.

(54) . Al-Ghazālī, *Tahāfut*, 120.13 / 71.1.

(55) . Ibid., 134.5 / 79.12. Druart, "Al-Ghazālī's Conception of the Agent," 428–32.

(56) . On this element of Ibn Sīnā's teachings, see above pp. **142–3**.

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(57) . Al-Ghazālī, *Tahāfut*, 157.1–5 / 92.3–6; 161.6–7 / 95.18–19; 163.2–5 / 96.1–4.

(58) . Ibid., 293.*ult.* / 175.14.

(59) . Gyekye, "Al-Ghazālī on Action," 88.

(60) . Al-Ghazālī, *Iḥyā'*, 4:322 / 2518–19.

(61) . Ibid., 4:325.*ult.* / 2523.12–13; cf. al-Zabīdī, *Itḥāf al-sāda*, 9:465.18–19; and Gramlich, *Muḥammad al-Ġazzālīs Lehre*, 558.

(62) . Al-Ghazālī, *Iḥyā'*, 4:326.6–7 / 2523.20–21.

(63) . *wa-yakūnu qad jarā fī sābiqi ʿilmihi an lā yafʿalahu…*; al-Ghazālī, *Tahāfut*, 286.8–10 / 171.9–10. The passage is composed of a full sentence at the beginning plus two *ḥāl* sentences that qualify the first. I follow Marmura's suggestion and see the first *ḥāl* as an objection.

(64) . Ibn Tūmart, *Sifr fīhi jamīʿ taʿāliq al-Imām al-maʿṣūm al-Mahdī*, 220.6–7; cf. Nagel, *Im Offenkundigen das Verborgene*, 109; and Griffel "Ibn Tūmart's Rational Proof," 779–80.

(65) . Ibn Tūmart, *Sifr fīhi jamīʿ taʿāliq al-Imām al-maʿṣūm al-Mahdī*, 219.16–20.

(66) . Al-Bukhārī, *al-Ṣaḥīḥ, qadar* 1; *anbiyā'* 1; cf. also *tawḥīd* 28 and *bad' al-khalq* 6. Cf. Wensinck, *Concordance et indices*, 1:22a–b. See Watt, *Free Will and Predestination*, 18; and van Ess, *Zwischen Ḥadīṯ und Theologie*, 1–32.

(67) . Muslim, *al-Ṣaḥīh, qadar* 2. Cf. Wensinck, *Concordance et indices*, 5:319a. See Watt, *Free Will and Predestination*, 17.

(68) . Al-Ghazālī discusses this question in *al-Iqtiṣād*, 222–25. The passage is discussed below, pp. **202–4**. He comes down on the latter side, saying that someone always dies "at the time of" (*bi-*, also meaning: "through") his appointed time of death (*ajal*). This is the usual language applied by Ashʿarites to that question; cf. Gimaret, *La doctrine d'al-Ashʿarī*, 423–28. For al-Ghazālī, this means that the *ajal* and the death are always created concomitantly, just like a cause and its effect.

(69) . Watt, *Free Will and Predestination*, 135. On the various positions on divine predetermination taken by Muʿtazilites, see ibid., 61–92; van Ess, *Theologie und Gesellschaft*, 4:492–500; and Gimaret, *La doctrine d'al-Ashʿarī*, 424–28.

(70) . Ibn Fūrak, *Mujarrad maqālāt al-Ashʿarī*, 135–39; Gimaret, *La doctrine d'al-Ashʿarī*, 423–32.

(71) . Ibn Fūrak, *Mujarrad maqālāt al-Ashʿarī*, 74.12–13; see also idem, 45.15–17; 98.8–11; and Frank, *Creation*, 70.

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(72) . Gimaret, *La doctrine d'al-Ashʿarī*, 393–95, 411–22.

(73) . Al-Isfarāʾīnī, "al-ʿAqīda," 134.4–5; see also ibid., 162, fragm. 72.

(74) . Al-Baghdādī, *Uṣūl al-dīn*, 145.10–12.

(75) . See below p. 191. Al-Fārābī's proposed solution to the dilemma between human free will and divine predestination (pp. 139–40) can also be understood as a reaction to the debate between Muʿtazilites and their Sunni opponents.

(76) . Abū l-Ḥusayn al-Baṣrī, *Taṣaffuḥ al-adilla*, 116.9–10; 118.14. See also the editors' introduction on pp. xviii–xix.

(77) . Ibn Fūrak, *Mujarrad maqālāt al-Ashʿarī*, 11.21; al-Bāqillānī, *al-Tamhīd*, 29–30; al-Baghdādī, *Uṣūl al-dīn*, 8.5–6; al-Juwaynī, *al-Irshād*, 13.14–16.

(78) . On Avicenna's notion of a single eternal divine knowledge and how it contains individual events such as the eclipse of celestial body, see pp. 138–41.

(79) . *khurūj min al-dīn*; al-Juwaynī, *al-Irshād*, 96.3–7.

(80) . Ibid., 98.1–8. See Paul Walker's English translation of this passage in al-Juwaynī, *A Guide to Conclusive Proofs*, 56.

(81) . Al-Juwaynī, *al-Irshād*, 13.14; 94.14. Avicenna also taught that God's knowledge is timeless. On God's knowledge in classical Ashʿarite texts, see Frank, "The Non-Existent and the Possible in Classical Ashʿarite Teaching," 7–16.

(82) . Al-Ghazālī, *Iḥyāʾ*, 1:124.18–21 / 155–56; idem, *al-Arbaʿīn*, 5.13–6.2 / 5.7–11.

(83) . Al-Ghazālī, *Iḥyāʾ*, 1:125.1–4 / 156.12–15; corrected according to al-Zabīdī, *Itḥāf al-sāda*, 2:28–29, who adds *ṣifa azaliyya lahu* in the first sentence. See the translation and discussion of this passage in Frank, *Creation*, 53. It is also in al-Ghazālī, *al-Arbaʿīn*, 6.13–7.2 / 6.7–11.

(84) . Al-Ghazālī, *Iḥyāʾ*, 1:148.9–11 / 188.13–16. Tibawi, "Al-Ghazālī's Sojoun," 84.26–29, 105.

(85) . Al-Ghazālī, *Iḥyāʾ*, 1:148.16–20 / 189.1–5; Tibawi, "Al-Ghazālī's Sojourn," 85.6–11, 105. See the commentary by al-Zabīdī, *Itḥāf al-sāda*, 2:141.3ff.

(86) . Al-Ghazālī, *al-Iqtiṣād*, 101–13.

(87) . Ibid., 101.9–102.7.

(88) . One might compare this with Fakhr al-Dīn al-Rāzī, *al-Maṭālib al-ʿāliya*, 9:57.7–12 (also in idem, *Muḥaṣṣal*, 459.6–7), who concludes from the existence of an all-encompassing divine foreknowledge that human actions are predetermined and

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"compelled" (*majbūr*).

(89) . Al-Ghazālī, *Iḥyā'*, 4:111.5 / 2224.8 and 4:317.17 / 2511.*ult.*: *qudra azaliyya*; ibid. 4:12.17 / 2091.4: *hukm azalī*; ibid. 4:30.23 / 2115.21: *irāda azaliyya*. Compare with this, e.g., *al-Maqṣad*, 145.6, in which "God's foreknowledge" (*sābiq 'ilmihi*) is clearly spelled out.

(90) . Al-Ghazālī, *Iḥyā'*, 4:120.22–4 / 2237.6–7.

(91) . Ibid., 4:121.3–5 / 2237.16–18. See al-Zabīdī, *Itḥāf al-sāda*, 9:74; and Gramlich, *Muḥammad al-Ġazzālīs Lehre*, 209.

(92) . Al-Ghazālī, *Iḥyā'*, 4:111.8–9 / 2224.*ult.*

(93) . *al-qadaru sirru Llāhi fa-lā tafshūhu*; ibid., 4:440.4–8 / 14:2680.14. On the noncanonical sources of this *ḥadīth*, see al-'Irāqī's notes on the prophetical sayings quoted in the *Iḥyā'*; Gramlich, *Muḥammad al-Ġazzālīs Lehre*, 209; idem, *Nahrung der Herzen*, 2:172; and Michot, in his introduction to Ibn Sīnā, *Lettre au vizir*, 121*.

(94) . *qāla l-'ārifūna: ifshā'u sirru l-rubūbiyya kufr*; al-Ghazālī, *Iḥyā'*, 4:306.23 / 2499.15–16. Cf. al-Makkī, *Qūt al-qulūb*, 2:90.19–20: "Some of those who have knowledge of the implications of *tawḥīd* say: (…) The Lordship is a secret, revealing it would forfeit prophecy; and prophecy is a secret, revealing it would forfeit knowledge." Cf. Gramlich, *Muḥammad al-Ġazzālīs Lehre*, 522. Al-Ghazālī discusses the saying in his *al-Imlā'*, 44–46 / 3075–78. In *Ihyā'*, 1:128–34 / 161–74, he discusses *in extenso* which elements of the creed should not be discussed in public.

(95) . Cf. Marmura, "Ghazali and Ash'arism Revisited," 105. Frank, *Creation and the Cosmic System*, 45; idem, *Al-Ghazālī and the Ash'arite School*, 19.

(96) . Al-Ghazālī, *Iḥyā'*, 4:305.2–6 / 2494.3–7. Al-Ghazālī promises to discuss just as much of *tawḥīd* as is necessary to develop the right kind of *tawakkul*. It is the third among four degrees of *tawḥīd* that forms the basis of a sound *tawakkul*.

(97) . Ibid., 3:24.20 / 8:1376.16.

(98) . Cf. also Q 56:78 and 80:13–16. For the range of views of how the *lawḥ maḥfūẓ* has been understood by Muslims, see Daniel Madigan, "Preserved Tablet," in *EQ*, 4:261–63; van Ess, *Theologie und Gesellschaft*, 4:617–30.

(99) . Al-Ghazālī, *Fayṣal al-tafriqa*, 182–83 / 37–38. Note that this is not "the pen" of the thirty-fifth book of the *Iḥyā'* that writes on the human tablet. The *ḥadīth* that the first creation is the pen is for instance reported by al-Tirmidhī, *Jāmi' al-ṣaḥīh, tafsīr sūrat 68*.

(100) . Al-Ghazālī, *Tahāfut*, 258–61 / 155–57.

(101) . On Avicenna's teachings on prophecy, see p. 68.

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(102) . Al-Ghazālī, *Iḥyā'*, 3:24.17–22 / 1376.12–18; 4:241.12–13 / 2406.15–16. Cf. ibid., 4:217.20–22 / 2374.5–7. On the Avicennan influence on al-Ghazālī's understanding of the *lawḥ al-maḥfūẓ*, see Pines, "Quelques notes sur les rapports de l'*Iḥyā' ʿulūm al-dīn* d'al-Ghazālī avec la pensée d'Ibn Sīnā," 14–16. According to al-Ghazālī's report of the *falāsifa*'s teachings, the imaginative faculty (*quwwa mutakhayyila*) of the prophets can see in the *lawḥ al-maḥfūẓ* "the forms of future particular events imprinted in it" (al-Ghazālī, *Tahāfut*, 273.8–10 / 164.1–2).

(103) . *alladhī huwa manqūshun bi-jamīʿi mā qaḍā Llāhu bihi ilā yawmi l-qiyāma*; al-Ghazālī, *Iḥyā'*, 3:24.20–24 / 8:1376.16–17.

(104) . Al-Ghazālī, *al-Arbaʿīn*, 11.10–12 / 11.4–6. The quotation is from a "Sharḥ li-l-Maṣābīḥ" by an unidentified scholar whom he calls "*al-imām mawlānā ʿAlā' al-Dīn*." See Frank, *Creation and the Cosmic System*, 21, 45.

(105) . Al-Ghazālī hints to this position in the seventeenth discussion of the *Tahāfut* when he writes: "(…) the cognitions [that the miracle is among the way God acts habitually] slip away from the [people's] hearts and God does not create them" (*Tahāfut*, 286.7–8 / 171.7–8).

(106) . Ibn Fūrak, *Mujarrad maqālāt al-Ashʿarī*, 176.16–20; 177.10–15. Gimaret, *La doctrine d'al-Ashʿarī*, 459–60; Gardet, *Dieu et la destinée*, 193–94; Antes, *Prophetenwunder in der Aš'arīya*, 37–39.

(107) . Al-Juawynī, *al-Irshād*, 307–15. For the classical Ashʿarite views on prophecy and its verification, see Gimaret, *La doctrine d'al-Ashʿarī*, 453–63; Gardet, *Dieu et la destinée de l'homme*, 193–204; Antes, *Prophetenwunder in der Aš'arīya*, 29–46; Griffel, "Al-Ġazālī's Concept of Prophecy," 101–3.

(108) . See Antes, *Prophetenwunder in der Aš'arīya*, 95. In his *kalām* compendium *al-Iqtiṣād*, 198–99, al-Ghazālī writes about prophetical miracles in a very traditional way, teaching that miracles establish the veracity (*ṣidq*) of the prophets without clearly stating that miracles are a break in God's habit. See also his *al-Risāla al-Qudsiyya (= Iḥyā'*, 1:154.*ult.*/ 198.14–15) where he says, "Whereas the physician's truthfulness is known through experience and the prophet's truthfulness is known through miracles (…)" (Tibawi, "Al-Ghazālī's Sojourn," 91.29–30, 117).

(109) . Al-Ghazālī, *al-Munqidh*, 32.5–11.

(110) . Al-Ghazālī, *al-Mustaṣfā*, 2:154–55 / 1:138.16–17; idem, *Faḍā'iḥ al-bāṭiniyya*, 133–36; Weiss, "Knowledge of the Past: The Theory of *tawātur* According to Ghazālī," 93, 95.

(111) . Al-Ghazālī, *Arbaʿīn*, 64.1–4. The passage is translated in Gianotti, *Al-Ghazālī's Unspeakable Doctrine*, 156.

(112) . Al-Ghazālī, *Ḥimāqat-i ahl-i ibāḥat*, 9.17–18 / 171.3.

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(113) . See Griffel, "Al-Ġazālī's Concept of Prophecy: The Introduction of Avicennan Psychology into Aš'arite Theology," 138–44; and Frank, *Al-Ghazālī and the Ash'arite School*, 67–68.

(114) . Al-Ghazālī, *al-Munqidh*, 44.1–3; cf. the English translation by McCarthy, *Deliverance from Error*, 86.

(115) . Al-Ghazālī, *al-Munqidh*, 44.5–7.

(116) . Al-Ghazālī, *Iḥyā'*, 4:315.9–10 / 2508.18–19. The story of the pseudo-prophet al-Sāmirī and how he misled the Israelites to build the golden calf is told in Q 20:83–98.

(117) . Ibn Sīnā, *al-Ishārāt wa-l-tanbīhāt*, 220.15–221.2. Al-Ghazālī copied this passage in his report of philosophical teachings, MS London, British Library, Or. 3126, fol. 284a. Cf. also al-Ghazālī (?), *Ma'ārij al-Quds*, 165.12–13. See above pp. 68–69; and al-Akiti, "Three Properties of Prophethood," 191.

(118) . Ibn Fūrak, *Mujarrad maqālāt al-Ash'arī*, 157.4.

(119) . Al-Juwaynī, *al-Irshād*, 307–8, 314.9–12. According to ibid., 312.3–5, and to al-Juwaynī, al-*Shāmil* (ed. Tehran), 96–97, the "ahl al-ḥaqq" hold that miracles and *karamāt* are breaks in God's habit.

(120) . Al-Ghazālī, *Iqtiṣād*, 6.14.

(121) . Al-Ghazālī, *Tahāfut*, 289.11–12 / 173.1–2. That position is repeated, for instance, in al-Ghazālī's letters to Abū Bakr in al-'Arabī, see p. 69.

(122) . *lā tajidu fī sunnati Llāhi tabdīlan*, Q 33:62, 48:23 (…*taḥwīlan*, in Q 35:43); cf. also Q 30.30: *lā tabdīla li-khalqi Lllāh*. Al-Ghazālī, *al-Iḥyā'*, 4:8.4–5 / 2084.*ult*.

(123) . Al-Ghazālī, *Iḥyā'*, 4:12.17–18 / 2091.4–5. For other occurrences, see ibid., 4:30.23 / 2115.20–21; 4:58.9–11 / 2151–52; 4:370.4 / 2586.6–7. For Ibn Sīnā's understanding of this Qur'anic verse, see *al-Ḥikma al-'arshiyya*, 15.16–17.

(124) . Frank, *Creation and the Cosmic System*, 59; idem, *Al-Ghazālī and the Ash'arite School*, 20. For evidence that this position is the one that underlines the whole discussion in the seventeenth discussion of the *Tahāfut,* see Bahlul, "Miracles and Ghazali's First Theory of Causation," 139–41. Marmura, "Ghazali on Demonstrative Science," 196, 200–201; and idem, "Ghazali and Ash'arism Revisited," 105, maintains that for al-Ghazālī, miracles are a break in God's habit.

(125) . Al-Ghazālī was most explicit in his *Munqidh,* which was noted by many of his later critics. See, for instance, the remark in Fakhr al-Dīn al-Rāzī's *Muḥaṣṣal*, 491.11–12. On al-Ghazālī's subtle technique of including Ibn Sīnā's three properties of prophecy in his *Munqidh,* see al-Akiti, "Three Properties of Prophethood," 197–99. Al-Ghazālī's position about the verification of prophecy in the *Munqidh* has been a controversial subject among

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Western interpreters. For reports about the literature, see Poggi, *Un classico della spiritualità musulmana*, 239–45; and Griffel, "Al-Ghazālī's Concept of Prophecy," 105, n. 12.

(126) . Ibn Ghaylān, *Ḥudūth al-ʿālam*, 8.19–22.

(127) . Al-Ṭurṭūshī, *Risāla ilāʿAbdallāh ibn Muẓaffar*, 160.8–161.5; see Ghurāb, "Ḥawla ikhrāq al-Murābiṭīn li-Iḥyāʾ al-Ghazālī," 136.

(128) . Al-Akiti, "Three Properties of Prophethood," 194–95; Davidson, *Alfarabi, Avicenna, and Averroes, on Intellect*, 58–63, 116–17.

(129) . The Brethren present their teachings on prophecy in the thirty-fifth, forty-sixth, and forty-seventh epistles in *Rasāʾil Ikhwān al-ṣafāʾ*, 3:231–48 / 3:227–42, 4:123–96 / 4:61–144. On prophetology in the Brethren, see Marquet, *La philosophie des Ihˇwān al-Safāʾ*, 477–508; idem, "Révélation et vision véridique"; Goldziher, *Richtungen*, 186–96; Giese, "Zur Erlösungsfunktion des Traumes"; and al-ʿAbd, *al-Insān fī fikr Ikhwān al-ṣafāʾ*, 254–73.

(130) . Al-Akiti, "Three Properties of Prophethood," 195–210; Davidson, *Alfarabi, Avicenna, and Averroes, on Intellect*, 141–42; Griffel, "Al-Ġazālī's Concept of Prophecy."

(131) . Baffioni, "From Sense Perception to the Vision of God," 230–31. Cf also Baffioni's study on the Brethren's terminology with regard to the *awliyāʾ Allāh*: "An Essay on Terminological Research in Philosophy."

(132) . *Rasāʾil Ikhwān al-ṣafāʾ*, 3:246.15–17 / 3:240.21–23; German translation in Diwald, *Arabische Philosophie und Wissenschaft*, 202. On al-Ghazālī's letter, see above pp. 68–69. Ibn Sīnā's teachings on this subject are hardly different. He also says that "purification" (*tazkiya*) leads the prophets and *awliyāʾ* to their perfection (*al-Ishārāt wa-l-tanbīhāt*, 220.15–18).

(133) . See, for example, Whittingham, *Al-Ghazālī and the Qurʾān*, 68–69.

(134) . Ibn Sīnā, however, did not shy away from using the word *rūḥ* himself. See the *ʿaql qudsī* and *al-rūḥ al-qudsiyya* in *al-Shifāʾ, al-Ṭabīʿiyyāt, al-Nafs*, 248–49, and compare these teachings to al-Ghazālī's use of *al-rūḥ al-qūdsī* in *Mishkāt al-anwār*, 51–52 / 133.10–12, 77.13–15 / 166.9–12, 81.4–10 / 170–71.

(135) . Gimaret, *Le livre de Bilawhar et Būḏāsf*, 37–38, for instance, makes the case that the allegory of the king who confuses his bride with a corpse in al-Ghazālī's *Kīmiyā-yi saʿādat*, 1:105–6, goes back to the *Rasāʾil Ikhwān al-ṣafāʾ*, 4:212–14 / 4:162–64. Diwald, *Arabische Philosophie und Wissenschaft*, 7, mentions numerous connections between the *Rasāʾil* and works of al-Ghazālī. She promises to present their analysis in a volume that unfortunately never came out,

(136) . See below pp. 269–71, 219.

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(137) . Al-Ghazālī, *al-Munqidh*, 26.5–17; 27.2–6, 33.19–22. The *Ikhwān al-ṣafā'* are not mentioned in the *Tahāfut*.

(138) . *lahu ʿukūfun ʿalā Rasā 'ili Ikhwāni l-ṣafā'*; al-Subkī, *Ṭabaqāt*, 6:241.7; and al-Zabīdī, *Itḥāf al-sāda*, 1:28.22. See also Ibn Taymiyya, "Sharḥ al-ʿaqīda al-iṣfahāniyya," 116.19. These passages seem to be quotations from the lost *Kitāb al-Kashf wa-l-inbā' ʿalā mutarjam bi-l-Iḥyā'* by Abū ʿAbdallāh Muḥammad ibn ʿAlī al-Māzarī al-Imām. For a Spanish translation of the passage, see Asín Palacios, "Un faqîh siciliano, contradictor de Al Ġazâlî," 227.

(139) . Al-Subkī, *Ṭabaqāt*, 6:241.7–15; and al-Zabīdī, *Itḥāf al-sāda*, 1:28.22–28. Ibn Taymiyya, "Sharḥ al-ʿaqīda al-iṣfahāniyya," 116.19–117.9.

(140) . Ibn Sabʿīn, *Budd al-ʿārif*, 144.*ult*.–145.4. Ibn Sabʿīn mentions the twenty-first book of the *Iḥyā'* (*Sharḥ ʿajā 'ib al-qalb*), *Maʿārij al-quds fī madārij maʿrifat al-nafs, Mishkāt al-anwār*, and "*Kīmiyā' al-saʿāda*." It is unlikely that Ibn Sabʿīn read the Persian *Kīmiyā-yi saʿādat*, so the latter book is most probably the Arabic *Kīmiyā' al-saʿāda*, a reworked summary of the *Iḥyā'*. Bouyges, *Essay*, 136–37; and Badawī, *Muʾallafāt*, 275–76, have questioned al-Ghazālī's authorship of this book. On the passage by Ibn Sabʿīn, see Akasoy, *Philosophie und Mystik*, 230–31, 323. On the negative reaction to al-Ghazālī in the Muslim West, see also Serrano Ruano, "Why Did the Scholars of al-Andalus Distrust al-Ghazâlî?"

(141) . Ibn Taymiyya, "Sharḥ al-ʿaqīda al-iṣfahāniyya," 111.12.

(142) . Ibn Taymiyya, *Minhāj al-sunna*, 4:148:33–149–21.

(143) . Ibn Taymiyya, "Sharḥ al-ʿaqīda al-iṣfahāniyya," 115–18.

(144) . Al-Māzarī al-Imām may have brought up al-Tawḥīdī's name because in his *al-Imtāʿ wa-l-muʾānasa*, 2:11–18, he reports a dispute in the workshop of the copyists at Basra. There, Abū Sulaymān Muḥammad ibn Maʿshar al-Bīstī al-Maqdisī, one of the initial authors of the *Rasā'il Ikhwān al-ṣafā'*, claimed that prophets heal sick people and that the healthy souls of those who practice philosophy (*aṣḥāb al-falsafa*) are in no need of prophecy. Stern, "Authorship of the Epistles," 369, observes that this goes beyond what is taught in the *Rasā'il* and that "al-Maqdisī, in the heat of dispute, let slip from his mouth opinions which were usually restricted to the inner circle of adepts." Al-Maqdisī's position has more than once been misattributed to al-Tawḥīdī; cf., for instance, Moosa, *Ghazālī and the Poetics*, 155.

(145) . Al-Ghazālī, *Miʿyār al-ʿilm*, 122.11–20; MS Vatican, Ebr. 426, fol. 128b. This example appears more often in al-Ghazālī's work—see above p. 172—and in many editions, the word *ḥazz* ("incision, notch") is mistakenly rendered as *jazz* ("cutting off"). This led to the false impression, reproduced by most interpreters, that al-Ghazālī here talks about decapitation. The Judeo-Arabic manuscript, in which the letters *ḥā'* and *jīm* are very distinct, has *ḥazz*. Already in Bouyges's critical edition of the *Tahāfut*, 277.7, 278.3–4 (=

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166.6, 166.11 in Marmura's edition) it is clear that *ḥazz* is the *lectio difficilior* and should have been adopted. This is also true for the discussion in *al-Iqtiṣād*, 223.12–14, which is dealt with below on p. 202, and which clarifies that the *ḥazz* leads to "cleavages (*iftirāqāt*) among the atoms in the neck of him who is hit."

(146) . Al-Ghazālī, *Miʿyār al-ʿilm*, 123.8–11; MS Vatican, Ebr. 426, fol. 129a. I am reading *ḥuzzat raqabatuhu* according to the MS. This passage is discussed in Marmura, "Ghazali and Demonstrative Science," 195–96; Frank, *Al-Ghazālī and the Ashʿarite School*, 18; and Dallal, "Al-Ghazālī and the Perils of Interpretation," 783.

(147) . Frank, *Creation and the Cosmic System*, 38.

(148) . The *Miʿyār al-ʿilm* was most probably written in the same period right after the *Tahāfut* and before the *Iḥyāʾ ʿulūm al-dīn*. The following passage is also discussed in Marmura, "Al-Ghazali on Bodily Resurrection and Causality," 68–70; and Fakhry, *Islamic Occasionalism*, 62–63.

(149) . Al-Ghazālī, *al-Iqtiṣād*, 223.8–9. Marmura, "Al-Ghazali on Bodily Resurrection and Causality," 69, suggests that the "single cause" here is understood to be God, which would change the understanding of this passage. That interpretation, however, is not viable. It would allow for what can only be an absurd assumption for al-Ghazālī that if God is regarded as the only cause of death, He could not exist. In the whole passage God is nowhere mentioned as a cause (*ʿilla*). Here al-Ghazālī talks about what we usually regard as proximate causes of events such as death. The passage focuses on human knowledge of causal connections and not on the creation of them.

(150) . Al-Ghazālī, *al-Iqtiṣād*, 223.12–224.1.

(151) . *lazima min intifāʾihi intifāʾu l-mawt*; ibid., 224.3.

(152) . *al-mawtu amrun istabadda l-rabbu taʿālā bi-ikhtirāʿihi maʿa l-ḥazz*; ibid., 224.7–8.

(153) . See above p. 152.

(154) . Al-Ghazālī, *al-Iqtiṣād*, 224.8–10.

(155) . Ibid., 224.11–225.1.

(156) . Al-Ghazālī, *Iḥyāʾ*, 4:302.19 / 2490.15–16. Reading *taghbīr fī wajh al-ʿāql* instead of *taghyīr* according to al-Zabīdī, *Itḥāf al-sāda*, 9:385.30. Gramlich, *Muḥammad al-Ġazzālīs Lehre*, 515–16, in his otherwise meticulous German translation renders *asbāb* as "secondary causes," which leads to undue conclusions.

(157) . Al-Ghazālī, *Iḥyāʾ*, 4:302.19–20 / 2490.16–17; read *ʿaql* instead of *naql* following al-Zabīdī, *Itḥāf al-sāda*, 9:385.32.

(158) . Al-Ghazālī, *Iḥyāʾ*, 3:72.11 / 1445.15–16. In the first book of the *Iḥyāʾ*, 1:118.1–

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119.3 / 145.7–146.16, he clarifies that certain parts of the *ʿaql* are part of the human nature (*ṭabʿ*), among them the instinctive capacity to distinguish "the possibility of the possibilities from the impossibility of what is impossible (*jawāz al-jāʾizāt wa-stiḥālat al-mustaḥīlāt*)."

(159) . This list of seven sources follows the division in al-Ghazālī, *Miḥakk al-naẓar*, 47–52 (and subsequently *al-Mustaṣfā*, 1:138–46 / 1:44–46). See Weiss, "Knowledge of the Past," 100–101. In the *Miʿyār al-ʿilm*, 121–25, the division is slightly different and excludes reliably reported knowledge (*mutawātirāt*). In *Miʿyār al-ʿilm*, 125–35, there are three kinds (*aṣnāf*) of noncertain knowledge, which are further divided in many subdivisions, most of them discussed in quite an amount of detail. In the *Iḥyāʾ*, 1:103.5–7 / 124.18–20, al-Ghazālī includes *tawātur*. There, the four categories of certain knowledge are: (1) *a priori* knowledge and knowledge established through (2) *tawātur*, (3) experimentation (*tajriba*), and (4) *burhān*.

(160) . Al-Ghazālī, *Miʿyār al-ʿilm*, 122.12–15; idem, *Miḥakk al-naẓar*, 50.1–6;

(161) . *ḥukmu l-ʿaqli bi-wāsiṭati l-ḥissi wa-bi-takarruri l-aḥsāsi marratan baʿḍa ukhrā*; al-Ghazālī, *Miḥakk al-naẓar*, 50.1–12; and idem, *al-Mustaṣfā*, 1:141.2–12 / 1:45.10–16. For very similar lists of causes and their effects, see *Miʿyār al-ʿilm*, 122.13–15; and *Maqāṣid al-falāsifa*. 1:47.19–48.1 / 103.4–8. Cf. Frank, *Al-Ghazālī and the Ashʿarite School*, 18.

(162) . *quwwa qiyāsiyya khafiyya*; al-Ghazālī, *Miʿyār*, 122.16–18.

(163) . *idh yaḥtamilu anna zawālahu bi-l-ittifāq* only in the parallel passage from *al-Mustaṣfā*.

(164) . Al-Ghazālī, *Miḥakk al-naẓar*, 50.13–51.1; and *al-Mustaṣfā*, 1:142.2–8 / 1:45.16–46.2.

(165) . Bahlul, "Miracles and Ghazali's First Theory of Causation," 146–47, observes correctly that in al-Ghazālī, there is no difference between causal connections and "accidental connections," that is, those not representing causal influences.

(166) . Al-Ghazālī, *Miḥakk al-naẓar*, 51.9–10; idem, *al-Mustaṣfā*, 1:142.14–15 / 1:46.4. Note that al-Ghazālī's language assumes that the things itself have such habits; he does not speak of God's habit.

(167) . Al-Ghazālī, *Miḥakk al-naẓar*, 51.1–3; *al-Mustaṣfā*, 1:142.9–11 / 1:46.2–3.

(168) . Al-Ghazālī, *Miḥakk al-naẓar*, 51.11–12; *al-Mustaṣfā*, 1:142.*ult.*–143.1 / 1:46.4–5. Cf. *Miʿyār al-ʿilm*, 123.4–5. See Marmura, "Ghazali and Demonstrative Science," 195; and idem, "Ghazali's Attitude to the Secular Sciences," 107–8.

(169) . Al-Ghazālī, *Miʿyār al-ʿilm*, 122.16; reading "*ḥuṣūlu idrāki dhālika l-yaqīn*" according to MS Vatican, Ebr. 426, fol. 128b.

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(170) . Al-Ghazālī, *Miḥakk al-naẓar*, 51.4–9 (reading *iqtirānuhu* in line 8); cf. *al-Mustaṣfā*, 1:142.11–13 / 1:46.3–4.

(171) . Marmura, "Ghazali and Demonstrative Science," 195, remarks that al-Ghazālī's use of certainty in connection with the result of experimentation is somehow ambiguous. I see no such ambiguity.

(172) . Al-Ghazālī, *al-Munqidh*, 54.1–5.

(173) . Ibid., 43.12–*ult.* / 44.5–11. See Griffel, "Al-Ġazālī's Concept of Prophecy," 104, 141.

(174) . *mūjib wa-mūjab*; al-Ghazālī, *al-Munqidh*, 70.8–9.

(175) . Davidson, *Alfarabi, Avicenna, and Averroes, on Intellect*, 83–94; McGinnis, "Scientific Methodologies in Medieval Islam," 312–13.

(176) . Aristotle, *Categories*, 2a.35–2b.6.

(177) . *bi-tawassuṭi ishrāqi l-ʿaqli l-faʿʿāl*; Ibn Sīnā, *al-Shifāʾ, al-Ṭabīʿiyyāt, al-Nafs*, 235; see Hasse, "Avicenna on Abstraction," 53–58; and McGinnis, "Making Abstraction Less Abstract," 173–76, 180.

(178) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 44.11–12; McGinnis, "Scientific Methodologies," 313. Experience (*tajriba*) in Ibn Sīnā is also dealt with in a brief passage in his *al-Najāt*, 61 / 113–14 (see also pp. 169–70, but only in Dānishpazhūh's edition), and a passage in his *Risālat al-Ḥukūma fī-l-ḥujaj al-muthbitīn li-l-māḍī mabaʾ^{an} zamaniyy^{an}*, 134.18–135.6, which are both translated in Pines, "La conception de la conscience de soi," 255–57.

(179) . McGinnis, "Scientific Methodologies," 314–15.

(180) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 45.15–18, 46.4; McGinnis, "Scientific Methodologies," 317, 320.

(181) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 46.5–7.

(182) . *hunāka qiyāsun yanʿaqidu fī l-dhihni bi-ḥaythu lā yushʿaru bih*; Ibn Sīnā, *Risālat al-Ḥukūma fī-l-ḥujaj*, 134.23; see also *al-Shifāʾ, al-Manṭiq, al-Burhān*, 161.19; 46.11; 46.20. Janssens, "'Experience' (*tajriba*) in Classical Arabic Philosophy," 56.

(183) . McGinnis, "Scientific Methodologies," 318–19, argues that although induction attempts to engender a necessary judgment through the enumeration of positive instances, experimentation is based at least in part on the absence of falsifying instances. This requires, as McGinnis admits, that observation "for the most part" not include a falsification and that an exception be extremely rare, perhaps observed only once or twice. Janssens, "'Experience' (*tajriba*) in Classical Arabic Philosophy," 54, objects that

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this interpretation has no basis in the text and is simply too modern.

(184) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 46.2.

(185) . Aristotle, *Analytica posteriora*, 71b.9–12; McGinnis, "Scientific Methodologies," 321; Janssens, "'Experience' (*tajriba)* in Classical Arabic Philosophy," 55.

(186) . *ʿilm kullī bi-sharṭ*; Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 46.20–23; McGinnis, "Scientific Methodologies," 323; Janssens, "'Experience' (*tajriba)* in Classical Arabic Philosophy," 57–58.

(187) . Janssens, "'Experience' (*tajriba)* in Classical Arabic Philosophy," 58.

(188) . Ibid., 57–59.

(189) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 47.11; McGinnis, "Scientific Methodologies," 324–27.

(190) . Janssens, "'Experience' (*tajriba*) in Classical Arabic Philosophy," 59.

(191) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 161.19–*ult.*; Janssens, "'Experience' (*tajriba*) in Classical Arabic Philosophy," 60.

(192) . Ibn Sīnā, *al-Shifāʾ, al-Manṭiq, al-Burhān*, 48.14–*ult.*; Janssens, "'Experience' (*tajriba)* in Classical Arabic Philosophy," 59–62.

(193) . McGinnis, "Scientific Methodologies in Medieval Islam," 326–27.

(194) . Al-Ghazālī, *Miʿyār al-ʿilm*, 122.9–10.

(195) . Ibid., 122.18–123.1; MS Vatican, Ebr. 425, fol. 128b. Cf. also a parallel passage in *Maqāṣid al-falāsifa*, 1:48.2–3.

(196) . Marmura, "Ghazali and Demonstrative Science," 196.

(197) . See above p. 116.

(198) . Ibn Rushd, *Tahāfut al-tahāfut*, 522.8: "*fa-man rafaʿa l-asbāba fa-qad rafaʿa l-ʿaql*"; Frank, *Al-Ghazālī and the Ashʿarite School*, 17. See also Marmura, "Ghazali and Demonstrative Science," 183–85; and idem, "Ghazali's Attitude to the Secular Sciences," 105.

(199) . Marmura, "Ghazali and Demonstrative Science," 193.

(200) . *fa-l-natījatu minʿinda Llāhi taʿālā*; al-Ghazālī, *Miʿyār al-ʿilm*, 119.8–10; MS Vatican, Ebr. 426, fol. 127a. Marmura, "Al-Ghazali and Demonstrative Science," 194, points to parallels in Ibn Sīnā, in which the conclusion of an argument is an emanation from the active intellect.

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(201) . Kukkonen, “Causality and Cosmology,” 33–34.



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