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BEYOND BARBOUR: AL-GHAZALI'S ETHICAL-HIERARCHICAL MODEL OF THE SCIENCE AND RELIGION RELATIONSHIP

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ABSTRACT

This paper critically engages with Ian Barbour's influential fourfold typology of conflict, independence, dialogue, and integration, widely used to describe the relationship between science and religion. While Barbour's framework has shaped decades of discourse, it remains largely grounded in modern Western, predominantly Christian contexts and often fails to capture more ethically structured approaches found in other intellectual traditions.

In response, the paper turns to the thought of Abu Hamid al-Ghazali, offering a close analytical reconstruction of his epistemology and its implications for the relationship between scientific and religious knowledge. The study shows that al-Ghazali does not reject scientific inquiry as such, but rather situates it within a broader normative framework governed by ethical and spiritual ends. His position recognizes the legitimacy of empirical and rational disciplines, particularly in fields such as mathematics, astronomy, and medicine, while subjecting metaphysical extrapolations and epistemic overreach to theological and philosophical scrutiny.

On this basis, the paper suggests that al-Ghazali's thought may be interpreted as articulating what can be described as an Ethical-Hierarchical Model (EHM) of knowledge, in which different forms of inquiry are ordered according to their epistemic scope and moral purpose. Rather than proposing a new theoretical framework independently of the historical analysis, this model is presented as a conceptual reconstruction derived from al-Ghazali's own writings. By foregrounding the ethical orientation of knowledge and the hierarchical organization of epistemic domains, the study aims to contribute to a broader re-evaluation of science–religion relations beyond the limits of existing typologies.

KEYWORDS: Ian Barbour, Al-Ghazali, Science and Religion, Ethical-Hierarchical Model, Epistemic Pluralism

1. INTRODUCTION

The relationship between science and religion has long been a subject of philosophical debate, often framed through the influential models proposed by Ian Barbour (1966; 1990; 1997), including conflict, independence, dialogue, and integration. Barbour was trained both as a physicist and as a theologian, and his work played a foundational role in establishing the modern academic field of science and religion. These models have provided a conceptual map for understanding how scientific inquiry and religious belief interact, but they remain deeply rooted in modern Western intellectual contexts. As a result, they risk oversimplifying or even misrepresenting the more nuanced approaches developed in non-Western traditions.

This paper seeks to address this gap by turning to the classical Islamic philosopher and theologian al-Ghazali (d. 1111), whose thought offers an approach that may be interpreted as an Ethical-Hierarchical Model (EHM). By re-examining al-Ghazali's works, this study aims to broaden the conceptual vocabulary of science–religion studies and contribute to a more globally inclusive discourse.

Barbour's typology has shaped discussions of science and religion across a wide range of intellectual contexts, including Christian theology and, more recently, Muslim philosophical debates. At the same time, it has been criticized for functioning as a static taxonomy that risks flattening historical complexity and masking hybrid positions. A central example is Geoffrey Cantor and Chris Kenny's critique, which questions whether Barbour's fourfold scheme can adequately capture the shifting and context-dependent ways in which science and religion have actually interacted (Cantor & Kenny 2001). Barbour's own response clarifies that typologies may still serve a useful pedagogical purpose, even when they cannot substitute for detailed historical analysis (Barbour 2002).

In addition to academic critiques, Barbour's scheme has also been widely received and reworked within Christian theology, where scholars and communities sought to move beyond the traditional conflict narrative and articulate more constructive relationships between science and faith. This reception matters for the present paper because it shows that Barbour's typology has long been treated as revisable rather than final. Recognizing these debates helps motivate the present analysis of whether existing typologies adequately capture non-Western intellectual traditions.

The significance of focusing on al-Ghazali lies in his complex intellectual stance toward science. On the one hand, he recognized the legitimacy and necessity of empirical and rational inquiry, particularly in fields such as mathematics, astronomy, and medicine. On the other hand, he placed such forms of knowledge within a broader hierarchy of epistemic and ethical priorities,

subordinating them to metaphysical truths and spiritual ends. This tension resists simple classification within Barbour's fourfold typology. In this sense, al-Ghazali neither rejected science as inherently antagonistic to religion nor uncritically integrated it into theology. Instead, he filtered scientific claims through ethical and theological commitments, thereby presenting a position that affirms scientific value while setting boundaries against epistemic absolutism. This makes al-Ghazali's thought a valuable case study for rethinking science–religion relations.

At first glance, comparing al-Ghazali and Barbour may appear historically distant, given the different intellectual contexts in which they worked. Al-Ghazali wrote in the eleventh century within the framework of Islamic theology and philosophy, whereas Barbour addressed modern scientific developments within a twentieth-century Western context. The aim of the present comparison, however, is not to suggest historical continuity or direct influence. The comparison is philosophical and conceptual. Both thinkers grapple with a similar normative question concerning how scientific knowledge should be situated within a broader religious worldview and how the authority of empirical inquiry relates to theological and ethical commitments. By placing their approaches in dialogue, the analysis highlights different strategies for negotiating the relationship between science and religion and clarifies distinctive features of al-Ghazali's epistemological position.

The academic discourse on science and religion has often been dominated by Western categories and examples. Barbour's typology, while influential, has been criticized for its limited applicability outside the Christian context and for its lack of attention to ethical and cultural dimensions. Scholars such as John Hedley Brooke (1991), Peter Harrison (2015), and Mikael Stenmark (2004) have highlighted the historical complexity of the science–religion interface, moving away from the simplistic "conflict thesis." Within Islamic studies, however, the conversation has often been polarized. On one side, apologetic narratives emphasize Islam's "golden age" of science as evidence of harmony, while on the other, Orientalist perspectives reduce Islamic thought to a derivative tradition hostile to rational inquiry. More recent scholarship, including the works of Frank Griffel (2009), George Saliba (2007), and Peter Adamson (2016), has begun to complicate this picture by showing the diversity of approaches within the Islamic intellectual tradition.

Yet, despite this progress, relatively little has been done to position classical Islamic thinkers as contributors to contemporary debates on science and religion. This paper builds on this emerging scholarship by arguing that al-Ghazali, far from being a mere critic of philosophy, provides conceptual resources for a more nuanced understanding of the science–religion relationship, one that foregrounds ethical responsibility and epistemic hierarchy. In this respect, his thought may be interpreted as articulating an Ethical-Hierarchical

Model, understood as a reconstruction grounded in his epistemology rather than as an independently proposed framework. In this way, the study not only re-examines al-Ghazali's thought but also seeks to enrich the broader discourse on science and religion by clarifying conceptual structures already present within the tradition.

2. Barbour's Four Models

The contemporary study of science and religion has been shaped decisively by Ian Barbour's typology of four models (1997). This framework has provided a conceptual vocabulary for scholars across philosophy, theology, and religious studies, becoming a standard point of reference in the field. Yet, as many critics have noted, it was developed primarily with modern Western, especially Christian, contexts in mind, and thus requires critical scrutiny when applied to other intellectual traditions (Bigliardi 2012). Before turning to al-Ghazali's position, it is necessary to outline Barbour's four models in order to assess their adequacy and identify where they fall short. Doing so will not only clarify the strengths and limitations of Barbour's schema but also prepare the ground for a comparative assessment of these models in light of alternative approaches found in classical Islamic thought.

2.1. The Conflict Model

The first and perhaps most popularized of Barbour's models is the conflict model, which portrays science and religion as inherently opposed, locked in a zero-sum struggle for authority over truth. On this view, the claims of science and the claims of religion are mutually exclusive. To accept one is necessarily to reject the other. Historically, this model is often illustrated by the so-called "conflict thesis," according to which the history of science is largely a story of its emancipation from the shackles of religion. Narratives of Galileo's clash with the Catholic Church or the 19th-century debates between Darwinian evolution and biblical creationism are regularly invoked as paradigmatic examples. As Barbour (1997, 77) observes, "the image of warfare is common today, partly because conflict between extreme views lends itself to dramatic media coverage, while more subtle and complex intermediate positions tend to be neglected". Moreover, figures such as Richard Dawkins (2006) have popularized the idea that scientific rationality inevitably undermines religious belief.

Despite its cultural appeal, the conflict model has been heavily criticized in the scholarly literature. John Hedley Brooke (1991) and Peter Harrison (2015), among others, have shown that the conflict thesis rests on selective

readings of history and ignores the many cases in which scientific inquiry was pursued within religious institutions or motivated by theological assumptions. For example, medieval natural philosophy in both Christian and Islamic contexts often operated in close continuity with theological concerns rather than in opposition to them. Thus, while the conflict model captures a strand of modern polemics, it oversimplifies historical reality and risks perpetuating a false dichotomy.

Even Barbour, whose typology brought the conflict model into prominence, explicitly distances himself from it. He argues that both extremes, scientific materialism and biblical literalism, distort the proper domains of science and religion. As he states, "scientific materialism and biblical literalism both represent a misuse of science" (Barbour 1997, 78). For Barbour, the apparent warfare between the two arises not from any inherent opposition but from methodological or interpretive excesses on both sides. In this sense, his own position moves beyond the simplistic antagonism of the conflict model, emphasizing instead that the tension between science and religion results from human misapplication rather than from structural incompatibility.

Al-Ghazali's position in the Islamic intellectual tradition similarly resists the assumptions of the conflict model. Far from seeing science as a threat to faith, he distinguished between the legitimate domains of empirical and mathematical inquiry and the speculative overreach of metaphysics. As he writes:

> And whoever thinks that disputing the validity of these sciences [mathematics and geometry] is part of religion has committed an offense against religion and weakened its cause. For these matters are established by mathematical and geometrical proofs that leave no room for doubt ... As it has been said: an intelligent enemy is better than an ignorant friend" (Al-Ghazali 2021, 46–47).[1]

This statement reveals that al-Ghazali did not regard the demonstrative sciences as contrary to revelation; rather, he condemned those who, out of misplaced zeal, rejected them in the name of religion. Such rejection, in his view, only undermines the credibility of faith among rational minds. Thus, like Barbour, al-Ghazali locates the source of apparent conflict not in the essence of science or religion but in human misunderstanding and misapplication. Both thinkers, though emerging from distinct traditions, converge in rejecting the notion of an intrinsic warfare between scientific and religious knowledge. The conflict model, therefore, fails to capture this more nuanced reality and must give way to frameworks that account for ethical, epistemic,

[1] The translation is the author's own.

and cultural complexity, a task to which al-Ghazali's thought uniquely contributes.

2.2. The Independence Model

The independence model represents a markedly different approach from the conflict view. Rather than depicting science and religion as rivals, this model separates their domains, holding that each addresses distinct questions and employs different methods. Science, according to this view, investigates the empirical world through observation, experimentation, and rational analysis, while religion deals with meaning, purpose, and moral value. The two are therefore seen as autonomous but complementary forms of inquiry that need not overlap or contradict one another. This model gained considerable influence among twentieth-century scholars who sought to avoid the perceived extremes of both scientific reductionism and religious dogmatism.

Stephen Jay Gould's (1999) proposal of "non-overlapping magisteria" exemplifies the independence model. He argues that science concerns itself with factual questions about the natural world, whereas religion is concerned with questions of moral value and spiritual significance. Each discipline, in his view, operates within its own magisterium, or sphere of authority, and neither should encroach upon the other. The model has an intuitive appeal, particularly for those seeking to maintain peace between science and religion in pluralistic societies. It acknowledges the legitimacy of both domains without forcing an artificial synthesis.

Yet, despite its conciliatory intent, the independence model has drawn significant criticism. Barbour (1997, 89) himself regarded it as an incomplete solution, where he states that "if science and religion were totally independent, the possibility of conflict would be avoided, but the possibility of constructive dialogue and mutual enrichment would also be ruled out". According to Barbour, the independence model risks oversimplifying the intricate ways in which scientific and religious thought often intersect. The notion that science is purely empirical and value-free, while religion is solely concerned with ethics and meaning, is difficult to sustain in practice. Scientific theories frequently rest on philosophical assumptions about the nature of reality, causality, and truth, while religious traditions often engage empirical claims about the world. To treat them as entirely separate spheres may preserve harmony, but it does so at the cost of genuine dialogue and intellectual integration.

From the perspective of classical Islamic thought, the independence model captures only part of the picture. Thinkers such as al-Ghazali recognized the autonomy of different branches of knowledge but did not regard them as completely independent or self-sufficient. For him, the empirical sci-

ences possessed their own methods and legitimacy, yet they could not be detached from the moral and spiritual aims that give meaning to all forms of knowledge. In his view, science and religion are not two isolated domains but interrelated paths within a single hierarchy of understanding. As al-Ghazali (2021, 289) cautions, "He is mistaken who believes that knowledge without action will lead to salvation," and further reminds that "knowledge without action is madness, and action without knowledge is impossible" (Al-Ghazali (2021, 291). These statements from *Ayyuha al-Walad al-Muhib* (Dear Beloved Son) reveal that knowledge, to be complete, must guide human conduct and purify the soul. Al-Ghazali thus anticipates Barbour's concern that a strict separation between science and religion prevents "constructive dialogue and mutual enrichment." His epistemology integrates empirical inquiry within an ethical and spiritual framework, showing that truth cannot be grasped by reason or experience alone but must be directed toward moral and religious transformation.

The independence model, therefore, offers a valuable corrective to the polemical spirit of the conflict thesis by recognizing the distinctiveness of scientific and religious reasoning. However, its tendency to draw rigid boundaries between them limits its explanatory power. The challenge is not merely to avoid conflict but to understand how the two domains interact, inform, and constrain one another. This realization points toward more integrated frameworks that can account for both empirical validity and moral significance, a direction that Barbour explores further in his dialogue and integration models, and one that al-Ghazali develops in a more ethically nuanced way. This call for a more interactive relationship between science and religion sets the stage for Barbour's third model, dialogue, where the two domains begin to engage in constructive exchange.

2.3. The Dialogue Model

The dialogue model occupies a middle ground between conflict and independence. It recognizes that science and religion are distinct in their methods and concerns, yet it affirms that they can engage in meaningful conversation about common questions. Dialogue, in this sense, is not a contest for authority but a collaborative effort to deepen human understanding of reality. Barbour (1997, 93) observes that "since the 1950s, these sharp contrasts have been increasingly called into question. Science, it appeared, is not as objective, nor religion as subjective, as had been claimed. There may be differences of emphasis between the fields, but the distinctions are not as absolute as had been asserted". This shift in perspective made it possible to see science and religion

not as competing systems but as parallel interpretive enterprises concerned with coherence, meaning, and truth.

Barbour develops the dialogue model by showing that both science and religion involve interpretation rather than mere observation. He argues that the so-called "objectivity" of science and the "subjectivity" of religion are overstated, since both rely on interpretive frameworks and shared assumptions that shape how data are understood (Barbour 1997, 93). In this sense, scientific inquiry is never completely neutral but guided by paradigms, values, and communal judgments, just as religious understanding is mediated by symbols, traditions, and conceptual interpretation. The scientific criteria of coherence, comprehensiveness, and fruitfulness, Barbour explains, have their counterparts in religious thought, where ideas are also assessed for internal consistency, scope, and transformative power. This parallel is further illustrated in Barbour's discussion of Thomas Kuhn's (1962) *The Structure of Scientific Revolutions*, which maintains that both theories and data in science are dependent on the prevailing paradigms of the scientific community.

The dialogue model therefore provides an intellectually fertile framework that encourages mutual learning. Scientific inquiry can challenge religious traditions to refine their metaphysical assumptions, while theology can help science to reflect on its ethical and existential implications. Yet, Barbour is careful to avoid reducing dialogue to uncritical synthesis. He writes, "I am sympathetic with the hunger for spirituality in a materialistic culture … In both science and religion I believe that alternatives outside the mainstream should be carefully evaluated and neither dismissed out of hand nor uncritically accepted" (Barbour 1997, 98). For Barbour, dialogue requires openness to revision and an inclusive outlook that evaluates new ideas with both critical and spiritual sensitivity.

While promising, the dialogue model is not without its weaknesses. For example, Stenmark (2010) points out that dialogue often remains limited to abstract analogies or surface-level comparisons, without engaging the deeper epistemological questions that connect science and religion. Barbour himself acknowledges this risk by emphasizing the need for dialogue that is both intellectually rigorous and spiritually receptive. The challenge lies in transforming conversation into genuine exchange, where both domains expand their horizons through mutual critique and enrichment.

From the standpoint of classical Islamic philosophy, the spirit of dialogue resonates deeply with al-Ghazali's intellectual project, though his understanding is broader and more ethically grounded. For al-Ghazali, reason and revelation are not opposing forces but complementary modes of knowing. Rational inquiry, when guided by moral discipline and spiritual awareness, reveals the harmony and purpose embedded in creation, while revelation provides the metaphysical and ethical orientation that directs reason toward truth. As he

writes, "How can right guidance ever be attained by one who is content merely to imitation (*taqlid*) and transmitted reports, and rejects the paths of rational inquiry and reflection? Does he not know that there is no foundation for the religion except the word of the Prophet, and that it is the proof of reason which establishes the truthfulness of what he has conveyed?" (Al-Ghazali 2019, 96).[2] This passage underscores that for al-Ghazali, faith must be intellectually grounded and supported by rational inquiry, for reason is not the enemy of revelation but its necessary companion.[3]

In this sense, al-Ghazali's view of dialogue extends beyond intellectual interaction to the ethical and spiritual dimensions of human understanding. He further illustrates this interdependence through a metaphor: "The one who turns away from reason, relying only on the light of the Qur'an, is like a person who exposes himself to the sunlight while keeping his eyes closed. Such a one differs little from the blind. Reason together with revelation is light upon light, and whoever looks with only one eye at either of them alone is clinging to a rope of delusion" (Al-Ghazali 2019, 97).[4] Here, al-Ghazali rejects both rationalism divorced from faith and faith devoid of reason, presenting instead a vision in which knowledge serves as a bridge between intellectual insight and moral transformation. This broader conception of dialogue anticipates the movement from dialogue to integration, where both science and religion seek a unified and coherent understanding of truth.

2.4. The Integration Model

The integration model represents the most ambitious of Barbour's four frameworks. While the dialogue model calls for constructive exchange between science and religion, the integration model seeks a more comprehensive synthesis in which both domains contribute to a unified worldview. For Barbour (1997), integration does not imply the collapse of theology into science or the reduction of science to theology. Rather, it aims at a mutual reinterpretation of concepts, where each discipline enriches and corrects the other within a coherent metaphysical structure. As he explains, "both science and religion are concerned with the fundamental nature of reality and with the place of human beings within it," and therefore "an integrated worldview is a legitimate and necessary aspiration for reflective thought" (Barbour 1997, 99).

Barbour himself favors the integration model as the most promising of his four, yet he conceives of it as a dynamic and critical process rather than a final

[2] The translation is the author's own.

[3] For more discussion on al-Ghazali's view of *taqlid*, see Alhayyani (2024).

[4] The translation is the author's own.

synthesis. He emphasizes that integration must proceed "without distorting either field" (Barbour 1997, 101), ensuring that science retains its empirical rigor and religion its moral and metaphysical depth. In this spirit, he outlines three possible forms of integration. First, natural theology, which seeks evidence of God in nature. Second, theology of nature, which reinterprets theological doctrines in light of scientific discovery. Third, systematic synthesis, which is a comprehensive metaphysical framework that accommodates both scientific and theological insights. "The goal," Barbour writes, "is not to append religion to science, but to develop a worldview in which the two are mutually illuminating and mutually corrective" (Barbour 1997, 101).

In this model, science contributes an empirical account of natural processes, while religion provides an interpretive and teleological understanding of their ultimate significance. Integration thus aspires to coherence not only in knowledge but also in meaning. Barbour often draws on process philosophy, particularly the thought of Alfred North Whitehead, whose concept of an evolving, interrelated cosmos allows for divine immanence without negating natural causation. "God is not external to the world but immanent within its continuous creativity," Barbour observes, suggesting that divine and natural agency operate in complementary rather than competing modes (Barbour 1997, 104).

Despite its appeal, the integration model has been met with several important critiques. John Hedley Brooke (1991) argues that it tends to impose a false historical unity on what has always been a diverse and context-dependent relationship between science and religion. Peter Harrison (2015) similarly cautions that the integration model presupposes the existence of "science" and "religion" as stable, universal categories, whereas in earlier centuries these distinctions were fluid and often overlapping. From a philosophical standpoint, Philip Clayton (2000) questions whether the two domains share sufficient epistemic foundations to sustain genuine synthesis, noting that scientific and theological claims operate under different norms of justification. These objections suggest that while Barbour's integration model offers a compelling ideal of intellectual harmony, it risks oversimplifying the complex plurality of relations that have historically existed between scientific and religious thought.

From the perspective of classical Islamic philosophy, the aspiration toward integration resonates deeply with al-Ghazali's intellectual vision, though his approach is grounded more firmly in ethical hierarchy than in metaphysical system-building. Like Barbour, al-Ghazali sought a unified understanding that harmonizes empirical investigation with moral and spiritual insight. Yet, whereas Barbour's integration rests on the search for conceptual coherence, al-Ghazali's synthesis is rooted in the ethical purification and spiritual orientation of the knower. Knowledge, for him, achieves its highest form when it

leads the intellect from the multiplicity of phenomena to the unity of divine truth.

This integrative impulse in al-Ghazali's epistemology prepares the ground for what may be interpreted as an Ethical-Hierarchical Model (EHM), understood as a reconstruction of al-Ghazali's epistemology rather than as an additional framework within Barbour's typology. On this interpretation, science and religion are not merely reconciled through philosophical synthesis but ordered within a moral and metaphysical hierarchy that defines the proper purpose of knowledge itself.

3. AL-GHAZALI'S ETHICAL-HIERARCHICAL MODEL (EHM)

Recent scholarship has increasingly explored al-Ghazali's engagement with philosophy, science, and scriptural interpretation. Studies by Marmura (1965), Whittingham (2007), and Guessoum (2011) have examined the philosophical and theological dimensions of al-Ghazali's thought and the ways in which he evaluated scientific knowledge within a broader religious framework. More recent work by Daneshgar (2023) has further highlighted the importance of Qur'anic interpretation and epistemology in understanding al-Ghazali's intellectual project. These studies show that al-Ghazali did not simply reject philosophical or scientific inquiry but sought to situate it within a wider ethical and theological vision. The present analysis builds on this scholarship while focusing more specifically on how this vision can be reconstructed as al-Ghazali's account of the relation between scientific inquiry and religious commitments.

The aspiration for unity between science and religion, as seen in Barbour's integration model, finds a deeper and more ethically grounded expression in al-Ghazali's philosophy. Yet, while Barbour's integration seeks harmony through conceptual coherence, al-Ghazali grounds unity in moral and spiritual hierarchy. The purpose of knowledge, in his view, is not exhausted by explanation or synthesis but culminates in the transformation of the knower. This transformation marks the fundamental difference between the modern scientific ideal of intellectual mastery and the classical Islamic vision of knowledge as a path to ethical and metaphysical realization.

The following passages illustrate a broader epistemological orientation that has been widely discussed in contemporary scholarship on al-Ghazali, where his reflections on knowledge, authority, and intellectual responsibility are understood as part of a structured vision of the relationship between rational inquiry and religious commitment. In this light, al-Ghazali's position can be interpreted as articulating an ethical-hierarchical structure that both preserves the autonomy of scientific inquiry and situates it within a broader

moral and teleological order. On this interpretation, al-Ghazali does not merge the languages of science and religion into a single discourse, nor does he isolate them into separate domains. Rather, his thought appears to order them hierarchically according to their epistemic depth and ethical purpose.

To illustrate his position, let us consider the following quote from al-Ghazali's famous work *The Revival of Religious Sciences*: "As for praiseworthy knowledge, it is the knowledge of God the Exalted, His attributes, His acts, His way in creation, and His wisdom in ordering the Hereafter upon this world. This form of knowledge is sought for its own sake, for through it one attains the happiness of the Hereafter" (2005, 49).[5] This reveals that al-Ghazali viewed knowledge as intrinsically tied to moral and spiritual development rather than as a purely intellectual pursuit. By defining praiseworthy knowledge as that which unveils God's wisdom in creation and connects the temporal to the eternal, he establishes a hierarchy where every form of inquiry derives its meaning from its contribution to the soul's perfection.

The natural and rational sciences therefore hold an honorable yet intermediate position, for they illuminate the order of the created world and train the intellect, but they reach their fullest significance only when they direct the human mind toward divine reality. Al-Ghazali makes this hierarchical vision explicit when he writes that "the sciences, in all their degrees, either lead a person toward God or assist him in that journey in one way or another, and each occupies its own rank in terms of nearness to or distance from this ultimate purpose" (2005, 63).[6] Within this reconstruction of al-Ghazali's position, this conception shifts the relationship between science and religion from theoretical reconciliation to moral orientation, where knowledge is judged by the ethical and spiritual ends it serves.

This hierarchical conception avoids the extremes of both reductionism and fideism. It neither elevates scientific knowledge to the status of ultimate truth nor dismisses it as spiritually irrelevant. Rather, it locates science within a moral cosmology in which all forms of knowledge derive their value from their orientation toward the Good. In this sense, al-Ghazali's position differs from Barbour's integration model by grounding the unity of truth not primarily in conceptual correspondence but in ethical teleology. The relationship between science and religion thus becomes not a matter of epistemic negotiation but of moral alignment. It can therefore be understood as a process through which human inquiry reflects, however imperfectly, the order and wisdom of the divine.

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[5] The translation is the author's own.

[6] The translation is the author's own.

3.1. Core Principles of the Ethical-Hierarchical Model (EHM)

This reconstruction rests on three interrelated principles that reflect al-Ghazali's broader epistemology and moral psychology. These principles together form a coherent structure that helps explain why al-Ghazali's position does not fit neatly within Barbour's four models, especially in its insistence that knowledge is never value neutral but always oriented toward an ethical and spiritual end.

The first principle concerns the idea that knowledge unfolds in an ascending order of illumination. Al-Ghazali often describes the movement of the intellect as a progression that begins with the senses, advances through rational reflection, and culminates in the certainty granted by spiritual insight. Consider the following passage from *The deliverance from Error*:

> A human being is created devoid of any experience of the world, and his awareness of it begins through sensory perception. He then rises to another stage, which is the stage of reason, through which he grasps what is necessary, possible, and impossible, as well as matters that cannot be perceived by the previous stage. Beyond reason there lies yet another stage, in which a further eye is opened, by which one perceives realities that remain hidden from the level of reason (Al-Ghazali 2019, 73–74).[7]

According to al-Ghazali, each level possesses its own methods and degrees of certainty, yet revelation serves as the ultimate standard that confirms and guides the lower levels. He illustrates this difference through the example of a man who is born blind and learns the names of colors. Such a person may understand, in purely conceptual terms, that white is different from black and that red is distinct from both, yet his knowledge remains confined to definitions and verbal distinctions. If his sight is later restored, he does not acquire new propositions about colors, but the quality of his knowledge is transformed. What he previously grasped through description alone becomes something he now experiences directly, and the taste of that experience is of an entirely different order.

This example clarifies the reasoning behind the first principle of this reconstruction. Sensory perception and rational reflection can provide accurate and even sophisticated accounts of the world, yet they remain at the level of mediated concepts. Spiritual insight, which al-Ghazali presents as a higher stage of illumination, does not simply add more information. It changes the mode of knowing itself, much as the transition from blindness to sight transforms the awareness of color. In this perspective, empirical and rational

[7] The translation is the author's own.

sciences occupy legitimate and necessary positions within the hierarchy of knowledge, but they reach completion only when they are taken up into a higher form of insight that discloses the reality to which they point. Spiritual experience does not negate the lower levels. However, it fulfills them by granting a more immediate grasp of truth that confirms, deepens, and reorients what the senses and intellect have already attained.

In this hierarchical vision, empirical investigation retains full legitimacy within its proper domain. Al-Ghazali warns against those who dismiss the demonstrative sciences in the name of religion, insisting that such rejection weakens rather than protects faith. He identifies this tendency as the work of "an ignorant friend of religion who believes that religion ought to be defended by denying the demonstrative sciences,"[8] a stance that, in his view, harms both faith and intellect (2019, 46). At the same time, he maintains that these sciences reach completion only when they are situated within a metaphysical order that discloses their ultimate purpose. The hierarchy of knowledge therefore restores the idea that truth is not uniform but graded, for each stage of understanding draws the mind nearer to divine reality. Within al-Ghazali's epistemological hierarchy, this graded ascent becomes central to understanding the relation between scientific and religious knowledge, where higher insight fulfills rather than negates the achievements of the senses and the intellect.

The second principle concerns the idea that the value of knowledge is determined by its ethical orientation. For al-Ghazali, knowledge is never an end in itself but acquires worth only through the moral transformation it produces. Knowledge that fails to purify the soul or guide action remains incomplete. He repeatedly insists that knowledge must lead to virtuous conduct, for intellectual mastery without ethical purpose becomes spiritually barren.

The second principle of this ethical-hierarchical reading is evident in *The Revival of Religious Sciences*, where al-Ghazali offers counsel to the seeker of knowledge. He advises first that one should "purify the soul from blameworthy traits and reprehensible dispositions" (2005, 60).[9] According to al-Ghazali, knowledge is a journey that begins with the purification of the self before the acquisition of any understanding of the world. This process involves removing vices such as arrogance, pride, prejudice, and partisanship, all of which can obstruct the pursuit of knowledge. Elsewhere, al-Ghazali affirms that the purpose of knowledge is "the attainment of inner moral virtues" such as humility and patience (2005, 65).[10] In this sense, know-

[8] The translation is the author's own.

[9] The translation is the author's own.

[10] The translation is the author's own.

ledge acquires an essential moral function, and its value is determined by the degree to which it brings about ethical transformation within the learner.

Within this reading of al-Ghazali, this principle shifts the focus from theoretical reconciliation to ethical direction. Scientific inquiry becomes meaningful when it participates in this larger moral trajectory. This stands in contrast to Barbour's metaphysical integration, for al-Ghazali grounds the unity of knowledge not in conceptual coherence but in teleological alignment with moral purpose.

The third principle of this reconstruction concerns the idea that sensory experience, reason, and revelation form a unified yet differentiated structure of understanding. Al-Ghazali affirms the autonomy of empirical and rational methods while placing them within a broader order that points toward transcendence. The sciences clarify how natural processes unfold, philosophical reasoning explores the intelligibility of creation, and revelation discloses the ultimate purpose that binds these levels together. To illustrate the third principle, let us consider the following passage from *The Revival of Religious Sciences*:

> This is the true certainty according to the firmly grounded scholars, which they attained through inward witnessing. This form of insight is stronger and clearer than sensory sight. They rose above the level of mere imitation based on hearing alone, and their state resembles that of someone who is told and believes, then sees for himself and thereby confirms the truth. Others are like those who accept belief through good trust and faith, yet have not enjoyed the experience of witnessing with their own eyes. Happiness lies beyond the knowledge of unveiling, and the knowledge of unveiling lies beyond the knowledge of practical religion, and practical religion comes after the knowledge that preserves bodily health and its causes, and bodily health depends on cooperation and communal life (Al-Ghazali 2005, 66).[11]

This passage clarifies the logic of the third principle. Al-Ghazali does not dismiss sensory or rational knowledge but situates them as preparatory stages that lead toward deeper forms of certainty. Sensation provides the first encounter with the world, reason organizes this encounter into structured understanding, and revelation or inward unveiling grants a level of certainty that transforms the knower's relationship to truth. His analogy of one who first hears and believes, then later sees and confirms, captures the shift from mediated to immediate knowledge.

To illustrate this dynamic, consider a person who has heard detailed explanations of the taste of honey yet has never tasted it. Such a person may know the definitions, properties, and descriptions, but the moment he actually

[11] The translation is the author's own.

tastes honey, the quality of his knowledge changes. He does not gain new propositions but acquires a direct experience that validates and deepens everything he previously understood. In the same way, al-Ghazali views spiritual insight as a mode of knowing that completes what sensation and reason begin. It does not negate the lower levels but fulfills them by transforming conceptual understanding into lived certainty.[12] On this interpretation, this hierarchy establishes an epistemic pluralism grounded in unity. Science retains legitimacy within its domain, philosophical reasoning refines interpretation, and revelatory insight completes the ascent by disclosing the divine purpose that integrates all levels of understanding.

This pluralism is not a relativistic coexistence of unrelated perspectives but a functional unity in which each domain contributes within the limits of its own method and scope. Sensory experience initiates perception, reason refines and interprets it, and revelation crowns the process by granting access to realities that transcend conceptual knowledge. In this structure, reason remains noble yet finite, for its proper fulfillment requires the illumination provided by revelation once it reaches the boundaries of what it can grasp on its own. Al-Ghazali's hierarchy, therefore, preserves the integrity of each mode of knowing while integrating them within a single trajectory that leads the mind from empirical observation to metaphysical comprehension, and ultimately to spiritual certainty.

These three principles suggest that al-Ghazali offers a vision of the science and religion relationship that is not easily captured by Barbour's fourfold typology. On the ethical-hierarchical reading developed here, al-Ghazali affirms the autonomy of scientific inquiry while situating it within a graded hierarchy of understanding that culminates in spiritual truth. His position emphasizes the ethical orientation of all knowledge and upholds a unified yet differentiated epistemic order in which sensory experience, reason, and revelation cooperate in the pursuit of truth. In this reconstructed account, integration is not achieved by merging scientific and theological categories but by aligning every form of knowing with the moral and spiritual ends that define human flourishing. This reconstruction, therefore, clarifies how al-Ghazali's thought can expand the conceptual landscape of the science and religion debate by presenting knowledge as something evaluated not only by its explanatory power but also by its contribution to the ethical and spiritual perfection of the human person.

[12] The same reasoning appears also in Ibn Tufayl's philosophical fable *Hayy Ibn Yaqzan*. For more discussion, see Alhayyani (2023).

CONCLUSION

This study has sought to broaden the discourse on science and religion by placing al-Ghazali in conversation with Ian Barbour's four influential models. While Barbour's typology has provided an indispensable framework for understanding the interaction between scientific inquiry and religious belief, it remains shaped by assumptions and contexts that do not fully reflect the diversity of global intellectual traditions. Al-Ghazali's thought demonstrates that the relationship between science and religion can be understood in ways that extend beyond the categories of conflict, independence, dialogue, and integration. His work reveals a more ethically structured and spiritually oriented vision of knowledge that challenges the adequacy of Barbour's schema.

The Ethical-Hierarchical Model (EHM), as reconstructed in this paper, offers a conceptual lens through which al-Ghazali's epistemology can be integrated into contemporary discussions. On this reconstruction, al-Ghazali's position affirms the legitimacy of empirical and rational inquiry while situating these forms of knowledge within a graded hierarchy that culminates in spiritual insight. This reconstruction also underscores the ethical orientation of all knowledge and presents a unified yet differentiated structure in which sensory perception, reason, and revelation cooperate in the pursuit of truth. In this vision, science and religion are not understood as competing for authority but participate together in a wider moral and metaphysical landscape that defines the proper purpose of knowing.

By recovering al-Ghazali's contribution, the paper invites a more inclusive and philosophically robust approach to the study of science and religion. It shows that classical Islamic thought contains resources capable of enriching contemporary debates, not through historical curiosity alone but through substantive conceptual insight. This ethical-hierarchical reading provides one such insight. It suggests that the unity of truth is not achieved by collapsing disciplinary boundaries but by aligning the aims of inquiry with the ethical and spiritual ends that guide human flourishing. Recognizing this broader horizon may encourage a reconsideration of the assumptions that shape the modern discourse and opens the possibility for further dialogue between traditions that have often been treated in isolation.

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