

Islam, Science, and the Environment: An Application of Ibrahim Kalin's "Three Views of Science in the Islamic World"

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Abstract

Contemporary discussions on Islam and science are highly variegated, often taking on fundamentally opposite assumptions. The remarkable divergence in the basic methods and assumptions underlying publications in this field make any meta-study, or comparison between approaches, nearly impossible. One pragmatic meta-framework of Islam and science that incorporates a wide range of views and provides meaningful distinctions between them

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Bharucha, Bilkis. 2025. "Islam, Science, and the Environment: An Application of Ibrahim Kalin's "Three Views of Science in the Islamic World"." *American Journal of Islam and Society* 42, nos. 3-4: 98-120 • doi: 10.35632/ajis.v42i3-4.3724

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is suggested by Ibrahim Kalin. In his chapter titled, “Three Views of Science in the Islamic World,” Kalin identifies three (non-exhaustive) Islamic critiques of science, which he labels as: ‘ethical/puritanical’; ‘epistemological’; and ‘ontological/metaphysical’. Applying Kalin’s framework to contemporary publications on Islam and the environment offers a rich analysis, enabling us to identify attempts at the instrumentalization of Islamic ethics, hermeneutics, and metaphysics, as well as identify contact points between religion and science.

Keywords: Islam and science; Ibrahim Kalin; environmental ethics

Introduction

The academic literature in the field of Islam and science is exploding. In just the past two decades, hundreds of journal articles and dozens of new books have been published in the field, indicating a strong interest in applied topics, including Islamic jurisprudence and ethics (*fiqh*), applied hermeneutics (*tafsīr*), and applied theology (*kalām*). Interest in applied topics has been balanced by a number of theoretical works and models emerging from a critical application of history, anthropology, linguistics, and philosophy to the field of Islam and science. In their contributions to models of Islam and science, scholars have pointed to a wide variety of considerations, including the importance of distinguishing between mainstream and reformist Islam (Çoruh, 2020: 152–161), epistemic discontinuities in science (Iqbal, 2017: 25–64) and avoiding a unified historical approach (Dallal, 2017: 219–244).

All of this indicates remarkable divergence in the basic methods and assumptions underlying publications in this field, making any meta-study, or comparison between approaches, nearly impossible. The lack of meta-principles or guidelines to discuss the subject matter presents a real problem. For example, the introductory monograph, *Islam and Science*, proceeds with a historical approach in describing key figures (Guessoum and Bigliardi, 2023). This approach summarily does the job, offering an overview of the subject; however, it remains ineffective in characterizing substantive issues, limiting the possibility for further analysis.

The burgeoning field of Islam and science, then, may be in the process of being ‘reconstructed’ from multiple sides: first, as it attempts to integrate with a paradigm of religion and science that developed from a theology and metaphysics different from its own; second, as it responds to the epistemic shifts between premodern, modern, and postmodern science, and third, as practitioners in the field operate within different paradigms of Islam. In this case, a historical trajectory is not enough to account for the similarities and differences between what seem to be wildly differentiated attempts at understanding the relationship between Islam and science.

A Parsimonious Model: “Three Views of Science in the Islamic World”

Contemporary discourse on Islam and science indicates that any meta-framework or model employed to characterize the discourse must be comprehensive enough to include most, if not all approaches, and precise enough help us understand the differences and divergences of each perspective. One pragmatic meta-framework that proves useful as an efficient model of Islam and science, incorporating a wide range of views and providing meaningful distinctions between them, is suggested by Muslim philosopher Ibrahim Kalin in the anthology “God, Life and the Cosmos,” edited by Muzaffar Iqbal. In his chapter titled, “Three Views of Science in the Islamic World,” Kalin identifies three (non-exhaustive) Islamic critiques of science, which he labels as: Ethical/puritanical, Epistemological, and Ontological/metaphysical. For each view, Kalin briefly describes the time-period and context of development, key proponents, and limitations or problems. He concludes that the “ontological/metaphysical” framework is the most adequate, being free of inconsistencies while remaining intellectually and ethically satisfying.

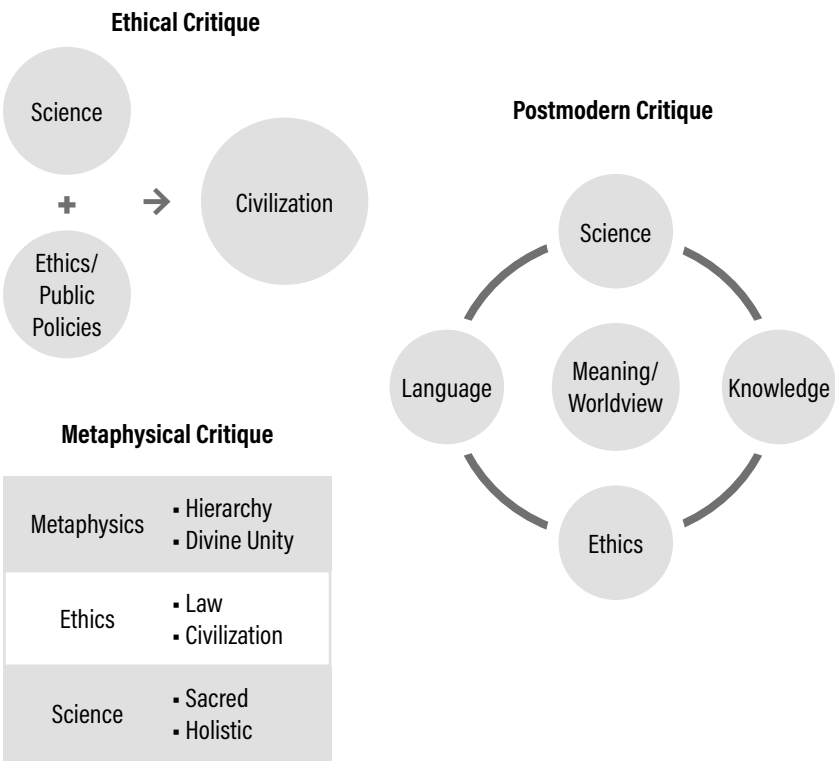
The parsimony of Kalin’s framework allows for its continued application. In this article, I apply Kalin’s framework to contemporary discussions on Islam and the environment to characterize different approaches, along with their key motivations and concerns. Using Kalin’s model, we can also anticipate and find evidence for problems and

limitations for each approach. However, as Kalin concludes, his framework is not exhaustive. It is safe to say that the thinkers discussed below generally defy a neat classification, as the scope of their work is often multi-layered. Nonetheless, this framework remains useful in isolating key features for each type of critique of modern science. Informing us from the environmental perspective is Anna Gade, through her ethnographic account of *Muslim Environmentalisms*.

The primary thinkers who have contributed to the field of Islam and science noted in Kalin's framework, such as Seyyed Hossein Nasr and Ziauddin Sardar, have also provided their own classification system of key thinkers. Nidhal Guessoum provides a rich narrative of their views, as well as the unique classification systems they each suggest. Their models offer overlapping ideas on how traditional and modern approaches to science and religion might be understood (Guessoum, 2010). The thinkers also identify unique groups, such as Muslim creationists and 'Bucaillism' as noteworthy in the religion and science discourse. These thoughtful yet somewhat ad-hoc categorizations attempt to resolve the issue of creating a comprehensive model for religion and science, but fall short of being able to articulate a framework that efficiently captures all perspectives.

Kalin does not develop a detailed theoretical model to characterize engagements on Islam and science; instead, after a brief historical overview, he articulates key philosophical differences between the various approaches taken by Muslims in the modern era. Kalin describes the "puritanical" view of science as the most popular, especially during the 19th century. This approach emphasizes the value-neutrality and objectivity of modern science, assuming no philosophical or ideological attachments. It adopts a linear view of history, where the "torch of science" is carried through civilizations in an inevitable march toward "progress," prompting a need to justify religious teachings through science, and the rise of scientific interpretations of the Qur'an. The second group identified by Kalin is characterized by its postmodern critique, which questions the epistemic status or truth claims of modern science, taking it to be a social construction. Under this approach, Muslim social scientists have attempted the "Islamization of knowledge," creating space for the Islamic point of view within the framework of modern

philosophy. The third group offers a metaphysical critique of modern science, emphasizing the metaphysical and ontological foundations of the modern natural sciences. Kalin concludes that the metaphysical approach is the most comprehensive and compelling because it gets to the root of the problem. Below are visual models of how each approach might organize the relationship between metaphysics, ethics, science, and society:



The terms “modern,” “postmodern,” and “traditional” are used to describe three different approaches. These terms are not strictly defined but serve to distinguish each critique. Key thinkers from each approach are used to exemplify each framework. A significant challenge for both the modern and postmodern approaches is the gap between their stated goals and how these are applied in practice. For the traditional approach, questions arise about whether its vision is as universal as it claims. The

examples used are not intended to be exhaustive, but to show how each lens might interpret environmental issues. This offers a rich analysis, enabling us to identify attempts at the instrumentalization of Islamic ethics, hermeneutics, and metaphysics.

Applications to Islam and the Environment

The Ethical Critique of Science

The ethical critique of science separates between ethical and technical questions. Their proposed remedy is two-fold: (1) continued advancement in scientific research and technologies and (2) inserting a dimension of social and environmental ethics into scientific practice. Kalin critiques the first because “this view looks for the solution in the problem itself.” As for the second, Kalin directly points out the susceptibility of this view to mobilization by various interests: “To limit ethics to policy implementations is to make it a matter of personal preference for the scientific community, whose political and financial freedom against that of the government and giant corporations is highly questionable” (Kalin, 2017, 65–98). Indeed, although figures such as Muhammad Abduh insisted that “the mother and father of science is proof,” to indicate that science was free from any cultural or nationalist ideologies, the scientific endeavor at that time was largely the product of nationalism as countries frantically sought to improve the technological capacity of Muslims (Guessoum, 2010). While it is true that scientists must know their limits, and that “metaphysics, theology, and ethics are [...] beyond the scientist’s professional competency,” values do play a role in shaping scientific inquiry (Koperski 2015). The assumption of science as a value-neutral endeavor can foment a ‘value-smuggling’ problem. By untethering the scientific endeavor from ethics, scientists are assumed to be defining research problems and priorities in an objective or value-free manner, while, in fact, remaining susceptible to, and influenced by either individual or cultural ‘background beliefs.’

Contemporary attempts to integrate Islamic ethics within public policy toward environmental matters also show surprising outcomes.

Consider the following defense of conservation: “The principle of conservation is part of the constant value that does not change or alter in accordance with people’s desires or economic conditions [...] Water should be conserved whether it is in plentiful or not. The principle should be applied in isolation of that which humans might consider important” (‘Izz al-Dīn, 2000). The author then mentions two concepts used in contemporary Islamic discourse on modifying practical ethics: *istiḥsān* (preference for that which is better) and *istiṣlāḥ* (public welfare). This discussion seems to offer a reasonable, principled defense of conservation. However, the question for practical ethics remains: does it inform practice? Gade’s own fieldwork on water conservation in Indonesia provides a striking example of how religious ethics works in a community setting. She discovered that conservationists were more successful when they presented the issue as one that would threaten the ability of the community to perform ritual ablution, which would affect the validity of daily prayers, rather than as a general exhortation to limit pollution for public health (Gade, 2019). It was only when the environmental threat was subsumed by the threat to religious practice that the community was motivated to take action. This example demonstrates a subtle difference between the instrumentalization of ethics for ideological purposes, and the application of ethics to solve contemporary problems. In the first case, practical ethics (on water conservation) were used to inform public policies by appealing to a common good (i.e., *istiṣlāḥ*). While this is a perfectly acceptable use of *fiqh* principles, it does not carry import for individual behavior. Instead, if coupled with an ideological environmental commitment, it appears to be an instrumentalization of religious ethics for social purposes. While this approach may be useful in articulating and defending state-level policies, it does not motivate individuals in the way that a threat to their personal religious practice and ethics might. In the second case, practical ethics on water conservation becomes relevant to individuals through the application of specific *fiqh* rulings, namely, on the purity of water used for ablutions.

‘Izz al-Dīn’s broader work on Islamic environmental law also describes an administrative system in which the practical ethics of officials played a significant role in shaping policies (Gade, 2019). Thus,

several important nodes of ethical practice, such as those found within the persona of administrative officials, or within community or individual settings, are ignored when ethical considerations are left entirely to public policy. Additional problems emerge when applications of *fiqh* are equated with public policy. For example, Gade explains that traditionally, fatwas were never enforced as a “public policy,” but that “nonbinding fatwas bring a moral authority to bear on environmental justice and may even carry a practical and activist impetus to draw up specific measures,” as demonstrated in the previous example (Gade, 2019: 150). The scope of Islamic law, then, may be personal, communal, or governmental, with varying levels of bindingness.

Another limitation of relying on Islamic jurisprudence to inform our engagement with technology is articulated by Mutaz El-Khatib in his chapter on genetic interventions in an anthology on bioethics by Muhammad Ghaly. While El-Khatib focuses on bioethics rather than environmental topics, his criticism generally holds for any form of technology. El-Khatib examines the limits of a *fiqh*-based approach in bioethics, pointing out the shortsightedness of modern jurisprudential approaches in countries like Egypt, where technologies are regarded as morally neutral instruments until they are employed toward a certain end. He argues that examining the effect of technologies on human life is a meta-ethical question, requiring philosophical evaluation. To be clear, El-Khatib is not suggesting that by asking meta-ethical questions we take a *maqāsid*-based approach to *fiqh*. Rather, he points out that it is inappropriate to task a jurisprudential scholar, whose primary concern is with practical positions on specific issues, to adequately identify the “impact of modern technology” (Ghaly, 2018). This raises an important concern about whether jurisprudential scholars can properly fulfill their roles without collaborating with philosophers and scientists, or if that is essential to produce adequate responses to technical questions with meta-ethical implications.

El-Khatib also notes that some fatwas move beyond public policy to appeal directly to the individual conscience. For instance, one fatwa recommended that “doctors and laboratories fear God who is watching them and stay away from actions that harm the individual, society, and

the environment.” Ultimately, however, the problem with using a jurisprudential approach to address questions of technology is not just one of extending the application of *fiqh* from the domain of public policy to the communal or individual domain, as described above. Rather, the discussion is outside of the domain of jurisprudence entirely and ultimately falls under the domain of philosophy, and even theology (Ghaly, 2018).

To summarize, proponents of the ‘puritanical’ view of science employ both technical and ethical/policy solutions for contemporary environmental problems. Their primary engagement with scripture is through jurisprudence, with arguments often developed through appeals to the public good. Some may seek rulings that are oriented toward public policy, while others are focused on communal or individual ethics. However, there are problems with both, reducing ethics to public policy, and using *fiqh* to bypass philosophical questions in modern science and technology. Thus, technical solutions, public policy and applications of *fiqh* all remain essential, but inadequate solutions. In the next section, we explore how the epistemological critique of science articulates an ‘Islamic’ science for all domains and potentially entertains philosophical concerns.

The Epistemic Critique of Science

The epistemic critique of modern science historicizes science, religion, and language, emphasizing the interpretive frameworks under which all knowledge and meaning is produced. Under this approach, the “Islamization of knowledge” movement rose to introduce the Islamic point of view within the framework of modern philosophy. A related project, the “Islamization of science,” is best understood through the works of Ismail al-Faruqi and Ziauddin Sardar, two key proponents of this approach. Al-Faruqi is best known for founding the International Institute of Islamic Thought (IIIT) and proposing an entire overhaul of science through articulating a framework of Islamic education (Guessoum, 2010). Sardar is better known for his de-colonialist lens, critique of Western science, and the construction of a new ethical framework for science (Guessoum, 2010). Thus, while both sought to reconstruct science using

the lens of Islam, al-Faruqi attempted to reformulate an epistemology of science using “Qur’anic principles,” while Sardar wanted to re-orient science within a broader Islamic worldview (Kalin, 2017: 65–98). Despite these differences, however, their approaches, as we will learn, face similar limitations.

Kalin’s general critique of this approach is that it puts the subject before the world; anything outside the subject is devoid of intrinsic meaning. Furthermore, if modern science is regarded as a socially constructed edifice of the West, then “Islamic science,” too, cannot be universally valid. Kalin concludes that the project of Islamizing the natural and social sciences falls prey to the “epistemologist fallacy” of modern philosophy. Kalin’s criticism warns against making purely identity-based claims, as it undermines the validity of one’s own position. One might concede, however, that this provincializing of science, especially under the methods of decolonization, has done much to help trace the provenance of ideas for correct cultural attribution. Tracing the genealogy of ideas helps to articulate (or construct) a field’s independent place in Islamic thought and to identify uniquely Islamic methodologies informed by an Islamic metaphysics. Proponents of this view might argue that a careful tracing of ideas and disciplines to their cultural fountainheads allows us to introduce alternative ethics and methodologies into the “metaphysically blind” outlook of modern science. This approach may be responding to El-Khatib’s suggestion to consider philosophy in issues of technology and science, by advocating for an alternative philosophy that is Islamic.

Under this lens, the environmental problem is the outcome of a particular cultural endeavor (e.g., Western science, or capitalism). It is not a universal problem. A thoroughgoing environmental response through this lens would first seek to deconstruct given environmental values and norms, before seeking to find an Islamic response. However, what we find instead is a partial engagement, where environmental values are accepted uncritically, and an Islamic solution offered by instrumentalizing “Qur’anic” terminologies. As a result, we find the growth of a vibrant Islamic environmentalism complete with its own vocabulary and methodology, providing a clear example of the eventual outcomes of adopting the “Islamization” approach.

The Islamization of environmental ethics involves the re-deployment of Qur'anic terminologies such as *āyāt* (signs), *khalīfa* (steward), *amāna* (trust), *ʿadl* (justice), and *mīzān* (balance) (Abdul-Matin, 2010). Gade (2019) decries such “self- directed, keyword-finding” approaches:

Before their adoption as environmental, terms meaning “steward,” “trust,” and “balance” have been used for multiple conversations in contemporary Islamic religious thought from topics ranging from gender to politics [...] Such tokenized use of Islamic terminologies can be challenged by the tradition of Muslim readings of the Qur'an that are liable to de-center mainstream environmental norms.

The deployment of scriptural terms without reference to any system of jurisprudence for practical ethics, or to a system of hermeneutics to contextualize the concepts lends itself to an organizing principle that is perfectly arbitrary. Regardless of whether “mainstream environmental norms” are defensible, defending them using an arbitrary list of “Qur'anic values” remains an unconvincing approach. As Gade points out, Muslims have developed an extensive system of hermeneutics and law to preserve the integrity of the scriptural tradition. A more convincing approach, therefore, would engage directly with that tradition. Thus, upon closer examination, some postmodern constructions of Islamic environmentalism yield a hermeneutics that instrumentalizes religious terminologies to accommodate environmentalism.

This approach clearly echoes al-Faruqi's idea of recreating a science using Qur'anic principles, and mirrors the approach taken by Sardar when he lists “fundamental Islamic concepts” for a new ethics of science. Incidentally, Sardar's keyword choices are: *tawhīd*, *khilāfa*, *ibāda*, *ilm*, *ḥalāl*, *ʿadl*, and *istiṣlāḥ* (Guessoum, 2010). Such keyword-listing approaches may be “no more than dissected parts of Islamic theology, law and ethics, in outline form,” (Izz al-Dīn, 2000: 81). Yet, their usage becomes problematic because without reference to the broader landscape of jurisprudence or hermeneutics, these terms can be deployed for an environmental agenda, for a critique of modern science, or for just about anything else. Eventually, the type of ethics that is articulated is

not grounded in anything beyond the author's usage of the terms, and meaningful vocabulary becomes vacuous.

One might counter that aligning environmental values with Islam does not present a problem, invoking al-Faruqi's more pragmatic approach toward Islamization. In fact, Sardar feared that al-Faruqi's Islamization approach would "try to paint an Islamic color on western sculptures," and "Bring Islam under the West's fold by attempting to Islamize fields of knowledge that had originally been produced in the western mold" (Guessoum, 2010). Proponents of the Islamization movement were therefore quite aware that their approach easily lent itself to a superficial 're-colorization' of knowledge, even if they did not realize the more insidious aspect of eroding Islamic vocabulary. Thus, even if the agenda is accepted, the Islamization project may still undermine language, by applying terms to specific agendas.

It might be worth noting that Gade's method is also postmodern/decolonial and takes an ethnographic approach to describing Muslim environmental practices. Ultimately, however, Gade is not interested in establishing a new academic discipline of Islamic environmentalism, as much as she is in narrating ethnographic descriptions of "Muslim environmentalisms." Instead of trying to engage with a "decontextualized and generalized" environment, she remains focused on describing how historical trends inform contemporary practices (Gade, 2019). In some aspects, then, her approach aligns well with the decolonial thrust of Sardar's. However, her project remains thickly descriptive and refrains from instrumentalizing scriptural terms.

Finally, returning to the validity of this approach given Kalin's criticisms, we learn that while the epistemic critique can be readily understood in the context of social sciences and humanities, its extension into the domain of natural science remains more controversial. When applied to the appropriate domain, such as philosophy or the social sciences, this approach can yield remarkably astute insights into Muslim practices (e.g., as found in Gade's work). While Kalin points to the utter relativism engendered by the underlying philosophy of this approach, it is unlikely that the proponents of this approach would accept that charge. Instead, they may point to a more granular metaphysics that affirms access to objective, metaphysical

truths, while maintaining cultural relativism for other scientific domains, which may be further subdivided into localized beliefs. However, since the thrust of the work under the epistemic critique of science does not elaborate on metaphysical claims, and instead grounds itself in Muslim practices, or simply focuses on the reconstruction of various disciplines from an Islamic perspective, we can conclude that these approaches do not make a direct appeal to metaphysics to develop their criticism. In the next section, we explore approaches to the environment that develop from those who do establish their claims by reference to metaphysics.

The Metaphysical Critique of Science

The traditionalist view offers a full-fledged critique of modern science (and modernity in general), seeking to restore a sacred view of the universe. Under this view, the environmental problem is identified both scripturally and philosophically. Scripturally, it is the result of a spiritual disaster within humanity, or the result of human wrongdoing (Gade, 2019; Brown, 2013; Nasr, 2005). Philosophically, the environmental disaster is evidence that modern science operates without any metaphysical commitments, having conflated method and philosophy. This approach cites the hierarchy of being to explain the interconnectedness of life and the necessity of ethics. The interconnectivity and holism of human and natural systems exists because it is contained within a hierarchy, at the core of which is belief in one Creator (Nasr, 2001). As a result, ethics cannot be dismissed as an afterthought, or as a voluntary measure tied to public policy or governance. Rather, existence itself requires ethical behavior and individual responsibility.

Another key element of this approach is the semiotics of nature; in fact, this theme is found across all Islamic approaches to the environment. Regardless of how modern science is critiqued, all works on Islam and the environment note that nature is regarded as a sacred symbol that communicates with humans and must be decoded. However, groups differ on how such decoding works. For modernists, decoding is done through scientific investigation, where the symbol to be decoded is a natural law. For traditionalists, decoding occurs through contemplation,

since the language of symbols conveys a greater certainty, or truth, than mere words. It may appear that by characterizing nature as a symbol that contains a meaning beyond itself, this approach instrumentalizes nature. However, the broader cosmology of this approach would seek to prevent that understanding, by placing all creation into a meaningful relationship with its Creator. This approach seeks to create a direct link between humanity and nature through the shared performance of worship.

Some extend the semiotics of nature to the language of theophany (Brown, 2013; Nasr, 2001), while others clarify that “Islam does not perceive the environment or its elements as a god, but rather as an ontological symbol upon which people’s minds can be focused to understand the Creator” (Izz al-Dīn, 2000). In general, even those who adopt a theophanic view of nature clarify that the natural world consists of manifestations of the divine names, rather than the essence of the Divine. The theophanic view of nature has been used to defend the preservation of species by pointing out that species extinction would limit the avenues available to understand the Creator, or the manifestation of divine names. This view, of course, raises questions about the role of already extinct species. A similar question regarding extinction that emerges from this view is, if a species mentioned in the Qur’an, such as the honey bee, becomes extinct, does it irreversibly limit future access to revelation by removing the visual/experiential object of reference?

Two figures Kalin associates with this approach, Seyyed Hossein Nasr, and Syed Naquib al-Attas articulate an epistemology of science centered on unity, informally referred to as “*tawhidic* epistemology.” Since all knowledge comes from the same Divine source, and scripture and nature are both described as “signs,” both domains must be accessed using the same interpretive methods. Nasr acknowledges that the non-literal, esoteric approach is unique to Sufis/gnostics, noting that for Islamic legal scholars, the Qur’anic text is more literal and prescriptive, with the natural world simply providing a context or setting for human actions to take place (Nasr, 2001). This distinction is important and identifies clear boundaries between different registers of hermeneutics. Al-Attas (2014) then proceeds with the gnostic epistemological approach to develop a detailed methodology for scientific inquiry: since the obscure verses of

the Qur'an are interpreted allegorically using verses that are clear and established, the Islamic approach toward empirical science is to explain the empirical world, consisting of ambiguous signs, through what is already established as true namely, the places of things within a system of relations. That is to say, the hierarchy of the cosmos allows us to understand the places of things and their significance, or limits thereof. Science, then, is simply an allegorical interpretation of those relations. By reconstructing science under this type of metaphysical interpretive framework, empirical facts are more likely to bend, and the role of 'fact-discovery' may be diminished in favor of 'fact-interpretation.'

Additionally, in his *Prolegomenon to the Metaphysics of Islam*, al-Attas (2014) begins an "Islamization of language" project to ensure that key Islamic terms are not sullied by limited and secularized underpinnings. Al-Attas identifies a "basic vocabulary of key terms" that have been misappropriated and "de-Islamized" and provides detailed explanation of each one to restore the "Islamic vision of reality and truth." His list of terms includes *'ilm* (knowledge), *'adl* (justice), *adab* (good manners and noble character), *ta'dib* (the education that instills *adab*), *faḍīla* (virtue), *ikhtiyār* (choice), and *sa'āda* (happiness). While this seemingly arbitrarily selected list of keywords resembles the approach discussed in the previous section, al-Attas is in fact claiming to restore the traditional understanding of those very keywords that have been deployed for secular purposes, or words that have changed meaning in their social context. This approach is found within the Islamic tradition. For example, Ghazali also attempted to restore the definition of words that he noticed had become corrupted through usage over time, and that had become more specific or general than their original use. Thus, the concern over language and vocabulary itself is not a hallmark of the epistemic critique; the metaphysical approach similarly has concerns over language, but they take a preservationist approach.

Most remarkably, al-Attas (2014) also redefines truth. Truth is no longer a correspondence of statements to facts; instead, under the "Islamic vision," it must also "satisfy the requirements of wisdom and justice," and include judgements of value, priority, and order. This may point toward a relativization of truth, as it attempts to combine factual and

ethical judgements; it may be subject to Kalin's critique of postmodern approaches. This problem has been noted by others who point out that the use of "non-publicly verifiable interpretations of revelation [...] is unlikely to convince anyone who is not already committed to its specific metaphysical vision" (Harvey, 2023: 404–420). And, although "many of his key interpretations of scriptural vocabulary fall within the established range of exegetic view," al-Attas instrumentalizes the terms to articulate a specific, Akbarian metaphysics that is obtained through spiritual intuition, and not directly through scripture (Harvey, 2023: 404–420).

While al-Attas adopts a postmodern approach in re-defining truth, his non-publicly verifiable approach to scripture echoes the esoteric interpretations favored by others using the metaphysical approach. For example, Nasr suggest a reinterpretation of one of the Divine names: "[A]ccording to the Islamic perspective God Himself is the ultimate environment which surrounds and encompasses Man [...] in the Qur'an God is said to be the All-Encompassing (*muḥīṭ*) [...] and the term *muḥīṭ* also means environment" (Nasr, 2005). By introducing the concept of a divine environment, Nasr fully embraces a theophanic view of nature. Ultimately, approaches that rely on esoteric hermeneutics that are not established through traditional exegesis have very limited validity.

Other proponents of the metaphysical critique of science are more careful in separating God from nature, and only refer to personalized accounts of Sufi/gnostic texts to articulate their view:

I looked on the universe with eyes undistracted and with Divine help I saw that all beings speak the existence of the Creator, and that in reality every silent thing is actually speaking. I opened myself to the hints or signs that glimmer in nature, and I fathomed the allegories they represent. I realized that everything in reality is gifted with the capacity to communicate either by the sense or by the intellect. I realized that the language of silence is more eloquent than speech (Ibn Ghanim, 1980).

This 13th century text captures the general sentiment of the semi-otics of nature: the language of symbols is the language of certainty

and truth. Yet, this is not empirical science, nor does it claim to replace it. Additionally, while this text recommends an allegorical approach to nature, it does not immediately do so on the basis of an epistemology based on unity, nor based on esoteric hermeneutics. Rather, it relies on anecdotes that speak for themselves. Other proponents of the metaphysical critique of science seek to standardize or generalize such narratives, and in doing so, attempt to make authoritative claims about Islam.

One such example is identified by Gade (2019: 210) in Nasr's work on the environment. She points out that Nasr constructs a "traditional Islam" in contrast to the "West" and deploys it for his "problem-solving" environmental paradigm. Nasr's environmental paradigm, insists Gade, is neither universal, nor timeless, since not all societies consist of "modern man" living in a "crisis." This demonstrates two problems in Nasr's approach: first, the construction of a "traditional Islamic perspective" toward science, on behalf of whom he speaks; and second, the attempt at universalizing particular concerns by appeals to religion. Yet, Ghanim's personal account on the semiotics of nature demonstrates that the metaphysical critique of science can easily be communicated without deploying religion, and without collectivizing individual, personal experiences.

Similarly, while the motivation to incorporate environmental concerns into normative Islam may be important for a particular subset of Muslims (especially those living in the West), it cannot be adopted as the standard account of "Islam and the environment." Contrary to Nasr's environmental paradigm, Gade points out that the Islamic understanding of "crisis" is not attached to planetary collapse: "Muslim worldviews have had a notion of crisis embedded in their eschatological reality from the start as an ongoing calculus, not the projection of an ultimate collapse into oblivion" (Gade, 2019). That is to say, no crisis exists today that differs from what existed thousands of years ago. Rather, given our moral accounting, there is a continuous threat of ultimate crisis if we do not behave morally, and a continuous opportunity for redemption if we do.

It is important to acknowledge that Nasr's critique of modern science remains compelling for many Western Muslims as it speaks directly to

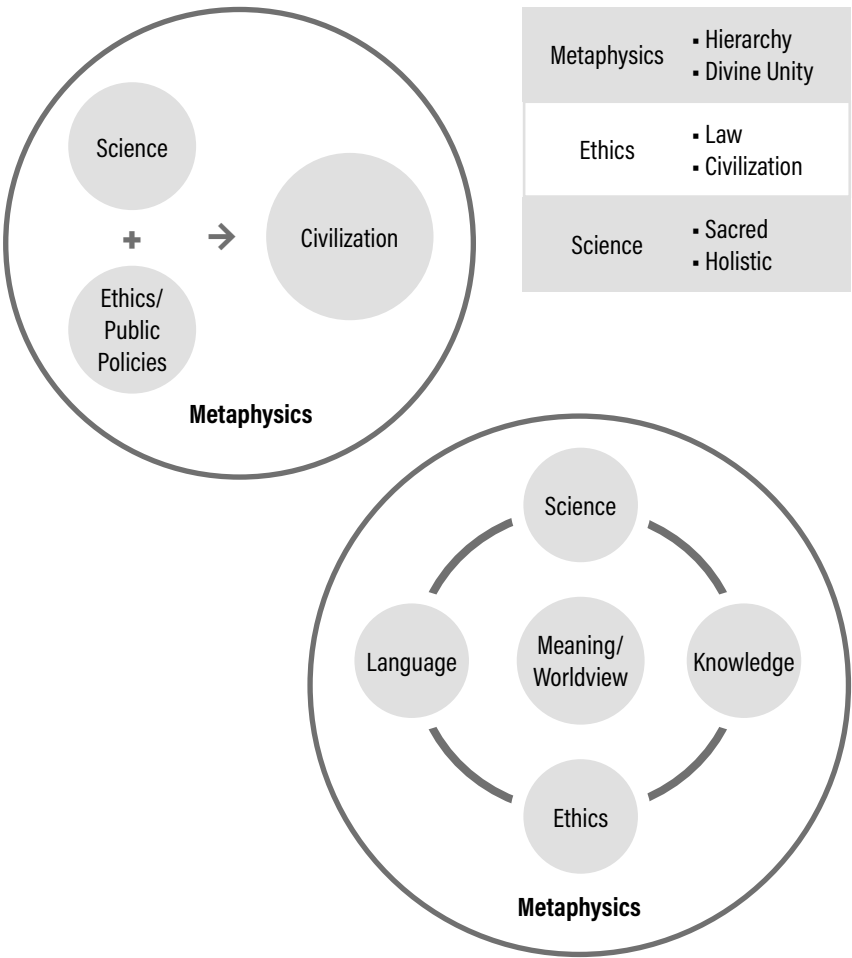
their environmental concerns. For Muslims in the West who wonder about when we might see a Muslim Thoreau, Aldo Leopold, or Wendell Berry emerge, Seyyed Hossein Nasr is very much the answer. If one is a “modern man” living in a world of “crisis,” Nasr’s account is undeniably compelling. Yet, once we take stock of our time and place, it is apparent that those are the wrong questions to ask of our tradition. Instead of trying to situate a specific, contemporary problem in universal/Islamic terms, we can look to the tradition on its own terms. Similarly, al-Attas’s *Prolegomenon* may be compelling to those who are already committed to his worldview. However, his engagement remains embroiled in a hopelessly self-circular space. Both Nasr’s and al-Attas’s grand metaphysical projects fail to be universally compelling; instead, a personalized account from a 13th century mystic is far more compelling in communicating the same message, for reasons described above. Finally, Gade is right to suggest that the Islamic environmental ethic we seek is perhaps best found in the daily rituals and practices, the lived traditions of Muslims, found in different expressions of religious life.

Conclusions

Kalin’s Model

The classification of thinkers who have contributed to discussions of Islam and the environment is generally straightforward, given that Kalin lists key figures and offers the defining features for each approach. However, some complications do develop. First, since this classification specifically considers views of religion and science among Muslim thinkers, it is important to note that each approach necessarily operates against a metaphysical backdrop. For example, in topics on the environment, we find a rich “common denominator” of semiotics and theophany of nature. However, groups do differ on how they deploy this view. For example, in the metaphysical critique, we find that this approach is used to generate an alternative method of empirical science. On the other hand, the modernist critique incorporates it into the practice of normal science. Of course, metaphysics is not explicitly mentioned in

the modernist and postmodern critiques of science, but if we attempt to model religion and science through Kalin’s framework, it is important to acknowledge the shared framework of metaphysics, even if it is deployed differently by each group. Thus, the models may be modified as such:



A second issue that develops in Kalin’s model is properly distinguishing between the postmodern and traditionalist groups. Kalin characterizes the former as denying objectivity in favor of a provincialized science. On that basis, al-Attas’ work closely follows the postmodern approach, despite his detailed articulation of an Islamic metaphysics. While it is

evident that his critique of science is more comprehensive than the postmodern view would allow, al-Attas' approach in Islamizing truth by integrating facts and values remains a defining feature of his work. That is to say, while other thinkers also allude to key elements of the metaphysical critique more broadly (such as the semiotics of nature, theophanic nature, and interconnectedness), they do so without provincializing truth, thereby making their work more readily accessible to public reasoning.

A third issue that Kalin fails to clearly point out in his model is that the same "subjectivist epistemology" attributed to the postmodernists is adopted by the traditionalists in their approach to science. Here, a discussion of realism/antirealism is warranted. Realism refers to our ability to affirm truths about reality, instead of holding them to be social constructions. Realism/antirealism can be deemed "global" or "local" depending on its scope. It can also be differentiated along domains, such as metaphysical, scientific, or linguistic. Here, we see both postmodernists and traditionalists, effectively adopting scientific antirealism to create a more robust critique of modern science. However, Kalin suggests that postmodernists take a global stance on antirealism, applying it to all domains, including metaphysics, thereby falling into the trap of subjectivism. In contrast, the metaphysical critique affirms access to objective truth, while emphasizing that such claims are not the task of empirical science. This approach often criticizes modern science for conflating truth with utility. In fact, an antirealist view of science can be reconciled with metaphysical realism, simply by differentiating between the claims of science and those of metaphysics, such that the former may be regarded as purely utility-based, and the latter, on their correspondence with reality. Thus, the metaphysical critique adopts an antirealist stance toward science, but preserves a broader metaphysical focus within which it reconstructs an Islamic science. As a result, it seems very similar to the postmodern approach. The primary difference is that the metaphysical approach is not as concerned with deconstructing existing methodologies of science to replace it with an Islamic view, which is directly the purview of postmodernism, as it is with layering on of additional levels of meanings, using different registers that permit non-scientific ways of interacting with the natural world.

More broadly, this analysis challenges the assumption in the philosophy of science that religion enters discourse on science in the form of meta-theoretic shaping principles, and not at the level of theory or observation (Koperski, 2015). This exercise in applying three contemporary critiques of modern science to discourse on Islam and the environment demonstrates that despite their shared metaphysical principles, each approach offers theoretically distinct models for religion and science:

- 1 Ethical Critique: Religion only enters the methodology of science through meta-theoretic shaping principles, helping to establish first principles.
- 2 Epistemic Critique: Additionally, it accommodates religiously-informed theories of science; Islamization of disciplines, primarily in the social sciences.
- 3 Metaphysical Critique: Additionally, it accommodates value-laden observations to construct an entirely new methodology of empirical science (al-Attas, 2014).

Approaches to Islam and Science

Contemporary discussions of Islam and science are highly variegated, often taking on fundamentally opposite assumptions. These divergences are difficult to capture in an efficient model that goes beyond simply narrating a history of Islam and science. Kalin's pragmatic delineation between modern, postmodern, and traditionalist approaches to science rescues us from both the isolation of self-referential paradigms, and the incidence of historical narratives, permitting a more substantive discussion.

Employing Kalin's model to understand contemporary work on Islam and the environment sheds light on the limitations faced by each approach. Each group suffers from the problem of instrumentalizing religion. Perhaps, as Gade points out, this is simply a feature of how the topic of "Islam *and* the environment" develops as a field, and what motivates its study. Nonetheless, Kalin's model helps us analyze how particular understandings of the relationship between Islam and science hold noticeably different implications for how ethics, hermeneutics, and

metaphysics are employed in contemporary discussions of Islam and science.

The ethical critique seems to maintain scientific and metaphysical realism. Under this view, science is offered its own autonomous domain. Their proposed solutions of using technology and introducing ethics might be an adequate solution to many environmental problems. However, it is important to acknowledge that ethical practice stretches across a variety of domains and can be subject to instrumentalization if meta-ethical questions that should be reviewed under the domain of philosophy are handed over to scholars of jurisprudence without adequate review.

The epistemic critique takes a decidedly antirealist approach toward science, but often is incomplete in its critique and moves to quickly “Islamize” a discipline through the use of arbitrary hermeneutics. More thorough approaches, such as Gade’s, offer thoughtful engagement on whether it is even appropriate to discuss “Islam and the environment.” While Kalin labels this group as adopting a subjectivist epistemology, it may be that this is a localized subjectivism, and is only applied to the discipline in question, and not to metaphysical truths. Finally, the metaphysical critique of modern science does not seek to resolve environmental problems piece-meal, through specific policy regulations or even through “better science,” but instead points to an ontological hierarchy that gives meaning to the relationship between humans and the natural world through the practice of ethics. Thus, this approach emphasizes the necessity of ethics. It also emphasizes the semiotics of nature, provided by accounts ranging from personal anecdotes of mystics, to developing a new methodology of empirical science. While the objectives of this approach are clear, it may require better spokespersons to explain their critique in a manner that is both accessible and compelling.

References

- Abdul-Matin, Ibrahim. 2010. *Green Deen: What Islam Teaches about Protecting the Planet*. Berrett-Koehler Publishers.
- Al-Attas, Syed Muhammad Naquib. 2014. *Prolegomena to the Metaphysics of Islam*. Penerbit UTM Press.
- Brown, Jihad Hashim. 2013. "Metaphysical Dimensions of Muslim Environmental Consciousness." *Tabah Essays Series*, (3).
- Çoruh, Hakan. 2020. "Relationship between Religion and Science in the Muslim Modernism." *Theology and Science* 18 (1): 152–161. <https://doi.org/10.1080/14746700.2019.1710355>.
- Dallal, Ahmad. 2017. "Islamic Paradigms for the Relationship between Science and Religion." In *God, Life, and the Cosmos*, 219–244. Routledge.
- Gade, Anna M. 2019. *Muslim Environmentalisms: Religious and Social Foundations*. Columbia University Press.
- Ghaly, Mohammed. 2018. *Islamic Ethics and the Genome Question*. Brill.
- Ghanim, Ibn. 1980 "Revelation of the Secrets of the Birds and Flowers." The Octagon Press
- Guessoum, Nidhal. 2010. *Islam's Quantum Question: Reconciling Muslim Tradition and Modern Science*. I. B. Tauris.
- Guessoum, Nidhal and Stefano Bigliardi. 2023. *Islam and Science: Past, Present, and Future Debates*. Cambridge University Press.
- Harvey, Ramon. 2023. "Islamic Theology and the Crisis of Contemporary Science: Naquib Al-Attas' "Metaphysical Critique" and a Husserlian Alternative." *Theology and Science* 21 (3): 404–420. <https://doi.org/10.1080/14746700.2023.2230429>
- Izz al-Dīn, Mū'il Yūsuf. 2000. *The Environmental Dimensions of Islam*. James Clarke & Co.
- Iqbal, Muzaffar. 2017. "Islam and Modern Science: Questions at the Interface." In *God, Life, and the Cosmos*, 25–64. Routledge.
- Kalin, Ibrahim. 2017. "Three Views of Science in the Islamic World." In *God, Life, and the Cosmos*, 65–98. Routledge.
- Koperski, Jeffrey. 2015. *The Physics of Theism: God, Physics, and the Philosophy of Science*. John Wiley & Sons.
- Nasr, Seyyed Hossein. 2005. *The Need for a Sacred Science*. Routledge.
- . 2001. *Science and Civilization in Islam*. ABC International Group.