

Semiotics as a Resource for Theology: Philosophical Warrants and Illustrations

BY BASIT BILAL KOSHUL



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Introduction

AT THE BEGINNING OF THE TWENTIETH CENTURY JOHN DEWEY argued that there is an urgent need for “reconstruction in philosophy.” Dewey was neither the first nor the last to sound this clarion call. But he is important in the present context because of some notable similarities between his project and the goals of analytic philosophy. While they differ on other important issues, Dewey and the analytic philosophers are very much in agreement on the following three points:

- a. They are in search of a scientific and publicly articulated rule of sustained analysis which is falsifiable and empirically testable.
- b. They are suspicious of subjectively grounded metaphysics.
- c. They pay discriminating attention to languages both in the arena of common sense everyday judgments and highly specialized discourses of the specialized sciences.

The fact that Dewey and analytic philosophy are very much in agreement on these three points serves as the starting point of offering philosophic warrants and illustrations of the contribution that semiotics can potentially make to theology.

The present inquiry will begin by looking at Dewey’s proposal for “reconstruction in philosophy.” Looking at philosophy with the eye of an historian, Dewey points to certain themes that are repeated during the historical development of philosophy. In the most general terms, Dewey divides the history of philosophy into the “classical” and “modern” periods. While there are other important factors that help to distinguish these two epochs, the emergence of science and its impact on philosophy is the most important factor for Dewey. The transition from the classical to the modern, is neither even nor smooth. If anything, there is a palpable degree of frustration on Dewey’s part because of the persistence of the classical tradition into the 20th century and the inability of modern philosophy to fully integrate the findings and methods of modern science into the philosophical enterprise.

The letter and spirit of Dewey’s quest for a scientific reconstruction of philosophy was served well by the language analysis of Wittgenstein and Austin and the logical pragmatics of Quine and Davidson. It is our position that the *Deweyian* spirit finds contemporary resonance in the insights of the founder of American pragmatism, Charles Sanders Peirce. Perhaps the most remarkable feature of Peirce’s oeuvre is that it broadens the horizons of both the philosophy of science and the philosophy of religion. In the area of the philosophy of science, Peirce’s logic provides a discipline for logical analysis of post-Newtonian

natural science. In the area of the philosophy of religion, Peirce's semiotics makes a major contribution to the rediscovery of reason and logic in the scriptures and traditions of Islam, Judaism, and Christianity in the aftermath of historical-critical studies and the hermeneutics of suspicion. Consequently, Peirce's semiotics can be viewed as a type of "analytic" philosophy that is as open to post-Newtonian developments in modern science as it is to post-foundationalist and post-critical developments in scriptural and religious studies. This monograph will offer illustrative examples of how Peirce's semiotics can contribute to building "analytic" resources for theology.

The monograph is divided into four sections. The first section will summarize Dewey's argument for a "reconstruction in philosophy." Dewey argues that while modern science has helped us to correct the most egregious errors in our conception of the universe that we inherited from ancient Greece, the same corrective process has not taken place in philosophy. We have embraced the findings of modern science and dispensed with the conception of the universe as being a static, discretely hierarchical, and finished product. In its place we see the universe as being a dynamic, evolving process in which the same laws that obtain on earth also obtain in the heavens. In contrast, modern philosophy has ignored the lessons that the scientific method of inquiry can potentially teach and continues to espouse theories of knowledge and mind rooted in the ancient world. Dewey argues that as a result of this discrepancy, modern philosophy has become rived by "an inner division" (Dewey, 1929, 49). The critical task in Dewey's reconstruction project is to confer epistemological dignity on three elements that classical philosophy has denigrated and belittled; the material universe, temporal flux, and human needs and purposes. He proposes that most efficiently pursuit to repair the rupture will be by studying the method of scientific inquiry closely and then reconfiguring the theories of knowledge and mind in line with the lessons learned.

The second section will look at another call for reconstruction that resonated around the same time as Dewey but in a very different cultural context. Muhammad Iqbal delivered a series of lectures in 1928, supplemented them with another one delivered in 1932, and published all of the material under the title *The Reconstruction of Religious Thought in Islam*. This section will show that the similarity between the reconstruction project of Iqbal and Dewey is much deeper than just the titles of their respective works. Iqbal argues that traditional Muslim thought is saddled with theological conceptions whose genealogy goes back to classical Greek philosophy. The "reconstruction of religious thought in Islam" requires that the classical philosophical conceptions be corrected in light of the findings of modern science and then Islamic theology be reconstructed with the aid of the scientifically repaired conceptions. The key task in Iqbal's reconstruction project is to confer metaphysical dignity on three elements that classical philosophy has considered of no metaphysical value or significance; the world of nature, historical time, and the human self. Iqbal's reading of the Qur'an shows that these three elements are of the same metaphysical value and significance as the revealed Word of God itself but the appreciation of their significance has been hindered by the continuing influence of the classical tradition. Iqbal considers openness to the findings of modern science to be the most effective means of overcoming this hindrance. This section will show that the difference between two reconstruction projects is one of emphasis – Dewey focusing more on issues of epistemology, Iqbal focusing more on metaphysics.

With the proposed calls for reconstruction in the background, the third section will turn to the writings of Peirce to identify philosophical warrants that support the two

calls for reconstruction and the conceptual and methodological resources that can assist in its undertaking. The starting point of this section will be Peirce's "Notes on Scientific Philosophy." In this essay Peirce summarizes the salient features of a philosophy that takes the method of scientific inquiry seriously. First and foremost this philosophy begins its inquiry in the world of everyday experience using the tools that are available to every ordinary individual. This very definition of philosophy confers a type of dignity on the ordinarily experienced universe and the human perspective that is practically impossible in classical philosophy. Towards the end of the essay, Peirce focuses his attention on the one characteristic of this universe that interests him most as a philosopher – evolution. By locating his philosophical inquiry in a constantly evolving universe, Peirce's philosophy enthusiastically embraces one of the elements that classical philosophy shunned most – temporal flux. The philosophical lesson that is implicit in Peirce's embrace of evolution is that the epistemological ideals of classical philosophy (i.e., certainty, exactitude, and absolute universality) are beyond the reach of human reason. Peirce's version of scientifically reconstructed philosophy (i.e., pragmatism) replaces the ancient epistemological ideals with the modern ideals of fallibilism, continuity, and evolutionary growth. This brief survey will show that by conferring epistemological and metaphysical dignity on that which ancient, pre-scientific philosophy had dismissed, Peirce's pragmatism offers philosophical warrant for the reconstruction projects proposed by Dewey and Iqbal.

The discussion will then move on to describe Peirce's pragmatic semiotics and pragmatic logic in some detail. The reasons for undertaking this discussion are the following. While pragmatism provides the philosophical warrants for the reconstruction projects, it does not provide neither the conceptual tools nor the logical methods that are needed to actually undertake the projects. The key insight of Peirce's semiotics is that a sign is a dynamic relationship between three elements: object, sign, and interpretant. At the same time Peirce's semiotics is conscious of the fact that the inquirer, inquired, and inquiry are all located in an evolving universe with a history behind and a future ahead of it. Pragmatic semiotics takes all of these factors into account and serves as a tool for conceptually capturing both continuity and evolution. While his semiotics provides the conceptual tools to conduct inquiry, the tools should neither be confused with nor separated from the method of inquiry. Peirce's triadic logic is his account of the scientific method of inquiry. For Peirce the best way to describe this logic is to study the practice of scientists in the laboratory. This study shows that scientific inquiry is a dynamic process composed of three stages: a) abductive generation of a hypothesis, in the aftermath of an experienced temporal effect, b) the deductive explication of the hypothesis, and c) the inductive testing of the hypothesis. While Peirce's semiotics offers the tools to conceptually capture the defining characteristic of the universe as understood by modern science – i.e., evolutionary growth – his logic of inquiry offers the method to study it systematically.

As noted at the beginning of the introduction, some of the key reasons for Dewey's reconstruction of philosophy are also central concerns in analytic philosophy. To the degree that Peirce's pragmatic semiotics and logic contribute to the project of reconstruction in philosophy we can consider Peirce's pragmatism to be a particular type of analytic philosophy. For the purposes of the present discussion we will call it *pragmatic analytic philosophy*.

The fourth section will build on the previous three sections and offer illustrative examples of how pragmatic analytic philosophy can contribute to building resources for theology. The first part of the section will begin with Peirce's "neglected argument for the

reality of God.” This is a three-tiered nested argument. Peirce argues that when we look at each of the three tiers of the argument and their relationship we see that the method of inquiry employed by the practicing scientist is a particular instance of this argument. For Peirce the relationship between the scientific method used by the scientists to study the universe, and his neglected argument, that could be used by theologians is so deep that the truth of the conclusions reached by one almost necessitates the truth of the conclusions of the other. Peirce takes a very strong position on this matter. To the degree that his claim is valid, pragmatic analytic philosophy is indeed an untapped repository of theological resources.

The second part of section four will focus on Iqbal’s proposed argument for the reality of God. Very much like Peirce, Iqbal critiqued the cosmological, teleological, and ontological arguments for the existence of God. Iqbal’s alternative revolves around the way the Qur’an uses the term *āya* (pl. *āyat*). According to Iqbal, the Qur’an considers all the world of nature – the part of reality that is studied by the sciences – to be symbolic of a Reality that is in the words of the Qur’an “...the First and the Last, the Manifest and the Hidden” (57:3). A careful look at Iqbal’s reconstructed argument for the reality of God shows that it is intimately linked with the conception of a dynamic, evolving universe. The semiotics and logic of Peirce offer Iqbal precise philosophical language in which to better articulate his proposed alternative. In short, while Section Three will offer illustrative examples of the contribution that pragmatic semiotics and logic can make to the reconstruction of philosophy as envisioned by Dewey, Section Four will offer illustrative examples of how Peirce’s semiotics and logic can enrich analytic resources for Islamic theology.

The monograph will conclude with an Afterword by Peter Ochs. Ochs will examine the logic and semiotics of Peirce and the theology of Iqbal in light of the pressing philosophical and social concerns of modernity. This analysis will show that the insights of these two thinkers complement and enrich each other. One brings philosophical and logical precision to the other, while the other offers scriptural wisdom and spiritual significance in return. Taken together the two perspective open up new ways of envisioning mutually affirming relationships between science, philosophy and theology.

Section One: John Dewey and Reconstruction in Philosophy

JOHAN DEWEY ARGUES THAT THERE IS AN URGENT need to rethink and reconstruct modern philosophy. The primary reason behind this urgency is the fact that modern philosophy has only partially internalized the spirit of modern science. While modern philosophy has enthusiastically embraced the findings of modern science about the physical universe, it has paid practically no attention to the lessons that can be learned by studying the method of inquiry that scientists use to reach their findings. Until and unless modern philosophy takes this latter step, it will remain out of touch with the spirit of modern times – and therefore not really relevant to its needs. The weight and reach of tradition is the primary hurdle that stands between modern philosophy and the (scientific) spirit of modern times. Dewey illustrates the strength of the classical tradition by comparing the thought of Aristotle and Francis Bacon (1561–1626) – the former representing the classical tradition and the latter marking the birth of modern science.

The contrast between Aristotle and Bacon is well-known. The former is the high point in the classical Greek tradition, the latter is “the great forerunner of the spirit of modern life” (Dewey, 1920, 28). The differences and the similarities between the two thinkers are so striking that Dewey dedicates an entire chapter to outlining them. While Bacon’s work is animated by the “spirit of modern life” it is written in a language that belongs to the ancient world. Metaphorically speaking, Bacon’s modern spirit is genuinely “new wine,” but it is served in “old bottles” (Dewey, 1920, 51). The intellectual milieu in Bacon’s Elizabethan England was such that; “The ancient tradition was still strong enough to project itself unconsciously into men’s ways of thinking, and to hamper and compromise the expression of the really modern forces and aims” (Dewey, 1920, 51). What is the “new wine” that Bacon is offering and what are the “old bottles” it is put into? What are the “really modern forces and aims” that he is advocating and what is the “ancient tradition” with which his vision is compromised? The answers to these questions will help us understand the contours of Dewey’s call for “reconstruction in philosophy.”

The Classical Tradition

As is well-known Aristotle’s physics saw the universe as a fixed, finished, and closed system. The earth is at the center of the universe and ether at its furthest, outermost reaches. The earth is composed of four elements: earth (matter), water, fire, and air. Since the earthly realm is composed of mutable, heterogeneous elements, earthly phenomenon are characterized by diversity and flux. In contrast the heavenly realm is composed of only one element, ether. Consequently, it is characterized by homogeneity and immutability.

After noting that the earthly realm is characterized by constant change, Dewey describes the contrast between the earthly and heavenly realms in these words:

Where there is change, there is of necessity plurality, multiplicity, and from variety comes opposition, strife. Change is alteration, or “othering” and this means diversity. Diversity means division, and division means two sides and their conflict. The world, which is transient, *must* be a world of discord . . . Ultimate and true Being on the other hand, since it is changeless is Total, All-comprehensive and One. Since it is One, it knows only harmony, and therefore enjoys complete and eternal Good. It *is* Perfection. (Dewey, 1920, 108)

The contrast between heaven and earth could not be starker. The former is characterized by Unity, Perfection, and Harmony while the latter is the site of bewildering diversity, unbridgeable divisions, and un-ending strife. Because the earth and earthly phenomena are characterized by diversity, flux, and discord they are furthest removed from Reality. And since the heavens and heavenly phenomena are characterized unity, immutability, and harmony they are both the Highest Good and the Most Real. Stated a bit differently, Aristotle’s physics leads to the conclusion that while the ethereal heavens represent True Reality and Highest Good, the material earth is the most degenerate form of Reality and furthest removed from the Good.

Dewey notes that Aristotle’s view of knowledge mirrors his conception of the universe. For Aristotle knowledge could be one of four types: *doxa*, *historia*, *empiria*, and *episteme*. While all four types of knowledge are valid in one sense, *episteme* is unlike the other three types of knowledge. *Episteme* is knowledge in the true sense of the word, while the other three are degenerate forms of knowledge. The reason why *doxa*, *historia*, and *empiria* are degenerate forms of knowledge is because the object that is known through them is a degenerate form of Reality:

The earth, though at the center, is the coarsest, grossest, most material, least significant and good (or perfect) of the parts of this closed [universe]. It is the scene of maximum fluctuation and vicissitude. It is the least rational, and therefore the least notable, or knowable: it offers the least to reward contemplation, provoke admiration and govern conduct. (Dewey, 1920, 55f.)

While *doxa*, *historia*, and *empiria* are ways of knowing the realm of earthly becoming, *episteme* is knowledge of heavenly Being. Since the latter is knowledge of the most real region of the universe – that of “divine ether” (Dewey, 1920, 55) – *episteme* is the truest form of knowledge possible.

Another way to demonstrate the superiority of *episteme* over the other types of knowledge is to look at its defining characteristics. Since the object of knowledge (i.e., divine ether) is immutable Being and Perfection itself, knowledge about it has the same characteristics:

[A]s objects are approached in which there is no movement at all, knowledge becomes really demonstrative, certain, perfect – truth pure and unalloyed. The heavens can be more truly known than the earth, God the unmoved mover than the heavens. (Dewey, 1920, 109).

For Aristotle *episteme* has the characteristics of exactitude, universality, and certitude because it is knowledge of eternal, immutable, and perfect Being. In contrast *doxa*, *historia*, and *empiria* are particular, probable, and contextual because they are knowledge of discordant earthly phenomena whose defining characteristics are change, diversity, and multiplicity. Consequently, for Aristotle, it is self-evident that the characteristics

of this knowledge would fall short of the epistemological equivalent of ontological perfection – certainty.

Another important characteristic of *episteme* is that it does not grow because growth is a sign of change and change a sign of deficiency and imperfection. Since Ultimate Being or the Unmoved Mover is eternally perfect, it means that it is free of even the possibility of change. Consequently, there is no possibility of change or modification in the knowledge about it because there is nothing “new” to learn about Ultimate Being:

It was an axiom of Aristotle that only that which was already known could be learned, that growth in knowledge consisted simply in bringing together a universal truth of reason and a particular truth of sense which had previously been noted separately. In any case, learning meant *growth* of knowledge, and growth belongs to the region of becoming, change, and hence is inferior to *possession* of knowledge in the syllogistic self-revolving manipulation of what was already known – demonstration. (Dewey, 1920, 31)

Given the fact ultimate Reality has characteristics that set it apart from degenerate reality and knowledge of ultimate Reality (*episteme*) has characteristics that set it apart from knowledge of degenerate reality, the method used to attain knowledge about the former is also absolutely different from the method to attain knowledge about the latter:

Aristotle thought of reason as capable of solitary communion with rational truth. The counterpart of his celebrated saying that man is a political animal, is that Intelligence, *Nous*, is neither animal, human, nor political. It is divinely unique and self-enclosed. (Dewey, 1920, 36)

Consequently, the individual seeking Certain Knowledge about True Being (the only kind of knowledge worth pursuing) should keep the following in mind: “Pure knowing is alone solitary, and capable of being carried out in complete, self-sufficing independence” (Dewey, 1920, 110).

The contrast with the methods employed by the artisans in their pursuit of knowledge could not be starker:

[The artisan] has to bring about changes in things, in wood and stone, and this fact is of itself evidence that his material is deficient in Being. What condemns his knowledge even more is the fact that it is not disinterestedly for its own sake. It has reference to results to be attained, food, clothing, shelter, etc. It is concerned with things that perish, the body and its needs. It thus has an ulterior aim, and one which itself testifies to imperfection. For want, desire, affection of every sort, indicate lack. Where there is need and desire – as in the case of all practical knowledge and activity – there is incompleteness and insufficiency. (Dewey, 1920, 110)

In other words, the method of the philosophers is built on the principles of disinterested, solitary contemplation of heavenly Being. The method of the artisans is built upon consciously purposeful, collective, sensual engagement and physical manipulation of earthly matter. The final result of the method of the philosophers is something that is certain, eternal, and universal. The final result of the method of the artisans is something that is ephemeral, temporal, and contextual.

From the foregoing discussion it is clear that from the perspective of the classical tradition, an absolute distinction and hierarchy is established. Earthly matter is denigrated in favor of heavenly ether. Temporal flux diminishes to the point insignificance when compared to immutable Being. Human needs and purposes are considered to be abject and denigrating in comparison to disinterested contemplation. As a result of this set of

distinctions and the inherent hierarchy, the following is an apt summation of the ultimate goal of classical philosophy:

[T]he office of philosophy is to project by dialectic, resting supposedly upon self-evident premises, a realm in which the object of completest cognitive certitude is also one with the object of the heart's best aspiration. The fusion of the good and the true with unity and plentitude of Being thus becomes the goal of classical philosophy. (Dewey, 1929, 34)

This is the classical tradition (or “old bottles”) that Bacon inherited and in which he poured his “new wine” – the vision that he outlined in *Novum Organum*.

The (Almost) Modern Revolution

Bacon is widely considered as one of the thinkers whose work heralds the dawn of the modern world and he is often called the “father of modern science.” Dewey concurs with this assessment but with a note of caution:

Bacon hardly receives his due as the real founder of modern thought, while he is praised for merits which scarcely belong to him, such as an alleged authorship of the specific methods of induction produced by science. (Dewey, 1920, 28)

For Dewey, Bacon is indeed “the great forerunner of the spirit of modern life” whose accomplishments may have been “slight” but who is “an outstanding figure of the world’s intellectual life” as a “prophet of new tendencies” (Dewey, 1920, 28). While an argument could be made that the term “inductive” is not entirely applicable to Bacon’s method of inquiry to set it apart from the classical “deductive” method¹, it is indeed the case that “breezes blowing from a new world caught and filled his sails and stirred him to adventure on new seas” (Dewey, 1920, 28). And even though he did not reach the promised land, “he proclaimed the new goal and by faith he described its features from afar” (Dewey, 1920, 28). The adventure that Bacon sets out on begins with challenging the traditional hierarchies between heaven and earth, material becoming and immutable Being, and disinterested contemplation and purposeful attention to human needs. Bacon invests earthly material nature, temporal flux, and the human element with epistemological worth. It is in this prophetic embrace of the traditionally meek and despised that we see the “spirit of modern life” take its first halting steps. In positively valuing that which the classical traditional had disdainfully denigrated, Bacon offers us “new wine” – but he puts it into “old bottles” (Dewey, 1920, 51). In the following paragraphs we will first look at the “new wine” more closely, then describe the “old bottles” in more detail, and finally turn our attention to the impact that this mismatch has had on philosophy since the days of Bacon.

Whereas, the classical tradition considered the ethereal heavens as the most superior object of inquiry, Bacon said that the material earth should be the primary focus of attention. For Bacon “[t]he earth is not superior in rank to sun, moon and stars, but it is equal in dignity, and its occurrences give the key to the understanding of celestial existences” (Dewey, 1920, 65). The claim that the earth is equal in dignity challenges the classical hierarchy between earth and heaven. Aristotle turned his back on the planet earth in his quest for *episteme* because it was “the coarsest, grossest, most material, least significant and good

¹ Dewey’s evaluation that Bacon only “intuited” the value of the inductive or experimental method but did not explicate it rationally reflects the general attitude of 19th and early 20th century thinkers. This evaluation has been challenged by recent scholarship. See Antonio Perez-Ramos (1988) and Peter Urbach (1987).

(or perfect)” (Dewey, 1920, 55) body in the universe and therefore the greatest obstacle to knowledge. This very despised, wretched Earth becomes the central focus of Baconian inquiry. Not only is the Earth worthy of study in order to understand earthly phenomena, it is the most reliable source of knowledge if one wants to study heavenly phenomena because the same laws that are operative on earth are also operative in the heavens:

The remote and esthetically sublime is to be scientifically described and explained in terms of homely familiar events and forces. The material of direct handling and observation is that of which we are surest; it is the better known. Until we can convert the grosser and more superficial observations of far-away things in the heavens into elements identical with those of things directly at hand, they remain blind and not understood. (Dewey, 1920, 65)

In addition to raising the Earth in dignity as an object of study, Bacon proposed a method of inquiry centering on the one phenomenon that classical thought considered the greatest obstacle to knowledge – temporal flux. In the classical world, change and mutability were the most obvious evidence of faults, problems, and deficiencies with that which was being observed. The only significance of change and flux was the eternal, immutable and pre-determined end towards which it was moving. The modern spirit adopts radically different attitude towards temporal flux. It makes it possible for the observer to consider change and flux in the world of nature as a sign of new possibilities and opportunities for the future:

The scientific attitude, as an attitude of interest in change instead of interest in isolated and complete fixities, is necessarily alert for problems; every new question is an opportunity for further experimental inquiries – for effecting more directed change. There is nothing which a scientific mind would regret more than reaching a condition in which there were no problems. That state would be the death of science, not its perfected life. (Dewey, 1929, 101)

Dewey is aware of the fact that there is no shortage of terms in classical philosophy which suggest that the Greek attitude towards earthly matter and temporal flux is more positive than he has presented it to be. He offers the following note of caution in this regard:

Terms which sound modern, words like potentiality and development abound in Aristotelean thought, and have misled some into reading into his thought modern meanings. But the significance of these words in classic and medieval thought is rigidly determined by their context. (Dewey, 1920, 57)

This context is none other than the conception of a fixed, static, and complete universe. In such a universe the “potential” or “development” of an acorn is nothing more than “a name for the predetermined movement of the acorn to the oak tree. It takes place not in things generally but only in some of the numerically insignificant members of the oak species” (Dewey, 1920, 58). The terms “potential” and “development” take on entirely different meaning in an open universe:

Development, evolution, never means, as in modern science, origin of new forms, a mutation from an old species, but only the monotonous traversing of a previously plotted cycle of change. So potentiality never means, as in modern life, the possibility of novelty, of invention, of radical deviation, but only that principle in virtue of which the acorn becomes the oak. (Dewey, 1920, 58)

In other words, the terms “development” and “evolution” can have a general meaning only in an open universe whereas these terms can only be understood in discrete, degenerate terms in the old conception of a closed universe. In conferring epistemological dignity on temporal flux, Bacon paves the way for conceptualizing generality.

Bacon very much agrees with the classical position that material nature and temporal flux present themselves in dizzying variety and mind-boggling diversity. The traditional way to deal with the variety and diversity centers on detached contemplation to reach the Unitary Ideal that the apparent diversity veils. The following is an apt summary of the method of inquiry that emerges in light of Aristotle's conception of Being and *episteme*:

[T]he measure of the worth of knowledge according to Aristotle, . . . , is the degree in which it is purely contemplative. The highest degree is attained in knowing the ultimate Ideal Being, pure Mind. This is Ideal, the Form of Forms, because it has no lacks, no needs, and experiences no change or variety. It has no desires because in it all desires are consummated. Since it is perfect Being it is perfect Mind and perfect Bliss; – the acme of rationality and ideality. (Dewey, 1920, 110f.)

In the place of detached contemplation, Bacon offers a new “technique of inquiry” to discover the deeper unity and harmony that is hidden behind the immediately apparent diversity and multiplicity:

Bacon eloquently proclaimed the superiority of discovery of new facts and truths to the demonstration of the old. Now there is only one road to discovery, and this is penetrating insight into the secrets of nature. Scientific principles and laws do not lie on the surface of nature. They are hidden, and must be wrested away from nature by an active and elaborate technique of inquiry. (Dewey, 1920, 31f.)

Another name for this “technique of inquiry” is “active experimentation.” It begins with focused attention on the heterogeneity, variety, and flux that characterize the world of nature. Then the inquiry moves on to conscious and deliberate manipulation of certain parts of what is observed and close scrutiny of the results. When the results of this scrutiny as subjected to disciplined intellectual reflection, certain patterns and relationships begin to emerge which had been obscured by the immediately given flux and variety. Recognition of these patterns and relationships marks the discovery of new facts about the world nature:

Active experimentation must force the apparent facts of nature into forms different to those in which they familiarly present themselves; and thus make them tell the truth about themselves, as torture may compel an unwilling witness to reveal what he has been concealing. (Dewey, 1920, 32)

Active experimentation positively values flux and change not only in the world of nature but also as a characteristic of knowledge itself. This point is best illustrated by contrasting the “logic of discovery” implicit in active experimentation with the “logic of demonstration” implicit in disinterested contemplation. The goal of the Aristotle’s “logic of demonstration” is to reach eternal, immutable Truth – Truth that has been known forever:

It was an axiom of Aristotle that only which was already known could be learned, that growth in knowledge consisted simply in bringing together a universal truth of reason and a particular truth of sense which had been previously noted separately. (Dewey, 1920, 31)

In the context of the “logic of demonstration” the word “learning” does not mean “*growth* of knowledge” because “growth belongs to the region of becoming and change” – it means the “*possession* of knowledge in the syllogistic self-revolving manipulation of what was already known – demonstration” (Dewey, 1920, 30). The contrast with the “logic of discovery” is stark: “Bacon eloquently proclaimed the discovery of new facts and truths to demonstration of the old” (Dewey, 1920, 30). For Bacon previously known facts and truths are to be valued only insofar as they assist in “the detection of new truth” and that the quest for knowledge means “invasion of the unknown, rather than repetition in logical form of the already known” (Dewey, 1920, 34).

As implied in the previous few paragraphs, Bacon's experimental method makes practical activity a most reliable means of attaining knowledge, when it is combined with careful observation and disciplined contemplation. Dewey notes that the goal of science is to "discover the conditions and consequences" of natural phenomena that human beings experience and that "this discovery can take place only by modifying the given qualities in such ways that *relations* become manifest" (Dewey, 1929, 104). The "modification of the given qualities" of natural phenomena requires the creation of laboratory conditions in which these phenomena can be controlled and manipulated. This artificial manipulation of natural phenomena produces knowledge about their behavior, constituents, and relations that are not readily apparent in the natural world. The experimental method envisioned by Bacon established a type of relationship between practical activity and knowing that had been categorically rejected by classical philosophy. Bacon's advocacy of active experimentation marks the first steps towards realizing that "[k]nowing is itself a mode of practical action and is *the* way of interaction by which other natural interactions become subject to direction" (Dewey, 1929, 107).

For Bacon, the perpetual growth of knowledge engendered by the "logic of discovery" and fueled by practical human activity has a very definitive goal. This goal is encapsulated in his famous aphorism: "Knowledge is Power." As with the terms "development" and "evolution," this phrase has very different meanings depending on the context in which it is viewed. In the context of the classical tradition, knowledge is a means of "power over other men in the interest of some class or sect or person," but in the modern context it means "power over natural forces in the common interests of all" (Dewey, 1920, 30). Bacon argues that when one looks at the achievements of the older "logic of demonstration" one finds that it has very little to show in terms of ameliorating the everyday suffering of ordinary people or presenting concrete evidence to support its claims of possessing the truth. Its most notable accomplishments have been to facilitate "victory of man over man in law courts, diplomacy, and political administration" (Dewey, 1920, 34). Bacon's experimental method and the logic of discovery that is implicit in it would take up the task of the despised practical arts as their ultimate goal. The goal would be continuous progress of knowledge which would produce "works, fruits, consequences of value to human kind through power over natural forces (Dewey, 1920, 34). In short, the experimental method advocated by Bacon is embedded in practical, human activity and aspires to address and redress practical human needs.

In light of the foregoing discussion we are in a position to describe the "new wine" that Bacon offers in more precise terms. He confers epistemological dignity on three things that the old world had denigrated and belittled; a) the material world of nature, b) temporal flux, and c) practical human activity and needs. By taking this stance nearly four centuries ago, Bacon is indeed a "prophet of new tendencies." But like many prophets before him "he suffers from confused intermingling of old and new" and page after page of his writings "is filled with matter which belongs to the past from which Bacon thought he had escaped" (Dewey, 1920, 28). In other words the "new wine" is served in "old bottles." Dewey brings rational precision to the poetic adage "old bottles" in these words:

The train of ideas represented by the Baconian Knowledge is Power thus failed in getting an emancipated and independent expression. These become hopelessly entangled in standpoints and prepossessions that embodies a social, political and scientific tradition with which they were completely incompatible. The obscurity, the confusion of modern philosophy is the product of this attempt to combine two things which cannot possibly be combined either logically or morally. (Dewey, 1920, 5 ff.)

The confused intermixing of old and new that characterizes Bacon's work has continued to bedevil post-Baconian philosophy – but in a different form. After Bacon the issue is not of using an old language to express new ideas or a feudal socio-cultural setting that is fundamentally at odds with the inclusive, non-hierarchical spirit of modern science. The “confused intermixing of old and new” is more subtle and much more pernicious. It comes in the form of consciously embracing the scientific facts about the world, while remaining blindly wedded to ancient, pre-scientific theories of knowledge and mind:

[Modern philosophy] has tried to combine acceptance of the conclusions of scientific inquiry as to the natural world with acceptance of doctrines about the nature of mind and knowledge which originated before there was such a thing as systematic experimental inquiry. (Dewey, 1929, 49)

The scientific picture of the world that modern philosophy has embraced is the following:

The world of modern science is an open world, a world varying indefinitely without the possibility of assignable limit in its internal make-up, a world stretching beyond any assignable bounds externally. (Dewey, 1920, 54)

While embracing the findings of science about the universe, modern philosophy has retained the foundational principles of ancient philosophy about the division between “knowledge and action, between theory and practice” (Dewey, 1929, 48). Here Dewey carefully notes that he is not referring to “the specific content of Greek thought” being embraced by modern philosophy but rather “its insistence that security is measured by certainty of knowledge, while the latter is measured by adhesion to fixed and immutable objects, which therefore are independent of what men do in practical activity” (Dewey, 1929, 29f.). Even a cursory study of the method of scientific inquiry shows that “the actual procedures of knowledge, interpreted after the pattern formed by experimental inquiry, cancel the isolation of knowledge from overt action” (Dewey, 1929, 48). Stated in non-pedantic terms, the method of scientific inquiry negates the division between knowledge and action no less forcefully than the findings of science negate the conception of a fixed and finished universe. Modern philosophy has embraced the latter and disdainfully ignored the former. The evidence that modern philosophy continues to embrace elements of the ancient tradition comes in the form of three principles that are at the core of all the modern theories of knowledge and mind:

[Modern philosophy] retained three significant elements of ancient thought; the first, that certainty, security can be found only in the fixed and unchanging; the second, that knowledge is the only road to that which is intrinsically stable and certain; the third, that practical activity is an inferior sort of thing, necessary simply because of man's nature and the necessity for winning subsistence from the environment. (Dewey, 1929, 51)

Dewey is conscious of the fact that the term “modern philosophy” is quite expansive and covers widely and wildly diverging schools of thought. But in spite of the apparent and real differences among them, there is virtual unanimity among these schools on one key issue:

Special theories of knowledge different enormously from one another. Their quarrels with one another fill the air. The din thus created makes us deaf to the way in which they say one thing in common . . . They all hold that the operation of inquiry excludes any element of practical activity that enters into the construction of the object known. Strangely enough this is as true of idealism as of realism, of theories of synthetic activity as those of passive receptivity . . . (Dewey, 1929, 22)

Dewey argues that if the object that is known is independent of the act of knowing or the process by which knowledge is attained, then an unbridgeable gap is opened up between the knowing mind and the known world. In spite of their diversity and deep disagreements, all the dominant theories of knowledge that have emerged since the days of Bacon have created this very gap:

The common essence of all these theories . . . is that what is known is antecedent to the mental act of observation and inquiry, and is totally unaffected by these acts; otherwise it would not be fixed and unchangeable. (Dewey, 1929, 23)

This is nothing other than the modern version of the ancient claim that in order for knowledge to be knowledge it has to be free of the human element. This position is advocated by even those theories of knowledge which acknowledge that the mental activity of the actor does play a role in the act of knowing. But then these theories go on to make the claim that one does not really know anything about objects in the world, one can only know “appearances”:

There have been theories which hold that mental activity intervenes, but they have retained the old premise. They have therefore concluded that it is impossible to know reality. Since mind intervenes, we know, according to them, only some modified semblance of the real object, some “appearance.” (Dewey, 1929, 23)

In sum, while the findings of science have had profound impact on our understanding of the physical universe, the method of scientific inquiry has had practically no impact on our understanding of knowledge, mind, and the object of inquiry:

[Modern philosophy] accepts the conclusions of scientific inquiry without remaking the conceptions of mind, knowledge and the character of the object of knowledge that are involved in the methods by which these conclusions are reached. (Dewey, 1929, 72)

As a result of accepting the “new wine” of scientific findings but putting it into the “old bottles” of ancient epistemological theories, all of modern philosophy contains “within itself an inner division” (Dewey, 1929, 49). Dewey goes on to argue that “all the characteristic problems of modern philosophy” (Dewey, 1929, 53) are rooted in this inner division. One of “many artificial problems which philosophy has . . . inflicted upon itself” because of this inner division “is the supposed need of reconciling, of somehow adjusting, the findings of scientific knowledge with the validity of ideas concerning value” (Dewey, 1929, 49).

At this point we are in a position to describe the “old bottles” in more precise terms. We saw that in the case of Bacon the term refers to the language that he uses to articulate his vision of the future. After Bacon the term refers to ancient theories of knowledge that continue to hold sway in the aftermath of the scientific revolution. When we look at Dewey’s description of the effects of embracing the ancient theories of knowledge in the scientific age, we can discern a clear pattern – the pattern is one of turning distinctions into divisions. For the purposes of the present discussion and in a preliminary way we will suggest that “binary logic” is the catalyst that transforms distinctions into divisions. The inadequate language used by Bacon, the theories of knowledge embraced by post-Baconian philosophy, and the inner divisions that characterize modern philosophy are different effects of binary logic.

Lest it appear that Dewey is holding philosophy (ancient or modern) to be the sole culprit in upholding the value of the “old bottles,” he offers a note of caution:

Philosophy did not originate the underlying division. It only gave intellectual formulation and justification to ideas that were operative in men's minds generally. And the elements of these ideas are as active in present culture as they ever were in the past. (Dewey, 1929, 3of.)

The idea that “the” object of knowledge of higher things can only be apprehended by means which are totally different from the means of apprehending objects of knowledge of lower things is far more ancient than even ancient Greek philosophy. This idea is also found to be operative in areas outside of philosophy – areas which are often considered antithetical to philosophic inquiry:

Indeed, through the diffusion of religious doctrines, the idea that ultimate values are a matter of special revelation and are to be embodied in life by special means radically different from the arts of action that deal with lower and lesser ends has been accentuated in the popular mind. (Dewey, 1929, 3of.)

In other words, a great deal of religious doctrine that is widely accepted by religious believers also contains within itself (or makes the claim of) a sharp distinction between the methods of coming to know ultimate reality (i.e. revelation) and coming to know lesser reality (i.e. action).

In light of the foregoing discussion we can say that Dewey's project of reconstruction in philosophy is composed of at least two inter-related tasks. First, conferral of epistemological dignity on the natural world, temporal flux, and the human element. Second, overcome the binary logic that turns distinctions (i.e. between heaven and earth, knowledge of facts and knowledge of values) in divisions. Before exploring the contribution that Peirce's semiotics and logic can make to Dewey's task of reconstruction, we will look at another call for reconstruction that was sounded around the same time as Dewey but in a very different cultural setting.

Section Two: Iqbal and the Reconstruction of Islamic Thought

ABOUT A DECADE AFTER DEWEY PENNED his *Reconstruction in Philosophy*, Muhammad Iqbal delivered a set of lectures that were later published under the title *Reconstruction of Religious Thought in Islam*. Given what Iqbal has said in other places, the term “religious thought” refers to the traditional discipline of *‘ilm-ul-kalam* – Islamic theology. In these lectures Iqbal is making the argument that there is a need to reconstruct Islamic theology. The similarities between Dewey’s reconstruction in philosophy and Iqbal’s reconstruction of theology is much deeper than the titles of their books. There are a number of other similarities that warrant close attention in the context of the present discussion. First, just as conferring epistemological dignity on the natural world, temporal flux, and human needs and purposes is central to Dewey’s reconstruction project, conferring metaphysical dignity on nature, history, and the human self is central to Iqbal’s reconstruction. Second, just as Dewey sees the influence of classical philosophy as the biggest hurdle to the emergence and growth of the modern spirit, Iqbal identifies the continuing influence of the classical heritage as the primary cause of obfuscating the wisdom of the Qur’an. Third, the discoveries of modern science and attentive study of the scientific method are as central to Iqbal’s project of religious reconstruction as to Dewey’s project of philosophical reconstruction. In this section we will look at the first two points in greater detail, leaving the third point for later.

Some tantalizing pointers in Dewey’s own work suggest that exploring similarities between his reconstruction in philosophy and a project of theological reconstruction could be potentially significant. Some of his passing comments suggest that Dewey’s project of philosophical reconstruction has a theological dimension or implications. He acknowledges the fact that “[t]elling the story of the universe in the form of rational discourse instead of emotionalized imagination signified the discovery of logic as a rational discourse” (Dewey, 1929, 15) and that Plato and Aristotle offer ways of systematizing knowledge that is distinct from the religious, mytho-poetic tradition. But this does not mean that the emergence of philosophy in ancient Greece represents a radical break with the pre-established religious tradition. On the contrary:

After all Plato and Aristotle reflected the meaning of Greek tradition and habit, so that their writings remain, with the writings of the great dramatists, the best introduction of a student into the inner most ideals and inspirations of distinctively Greek life. Without Greek religion, Greek art, Greek civic life, their philosophy would have been impossible; while the effects of that science upon which the philosophers most prided themselves turns out to have been superficial and negligible. (Dewey, 1920, 15)

He goes on to note that:

If one looks at the foundations of the philosophies of Plato and Aristotle as an anthropologist looks at his material, that is, as cultural subject-matter, it is clear that these philosophies were systematizations in rational form of the content of Greek religious and artistic beliefs. (Dewey, 1929, 16).

In other words, the tools, methods, and principles that classical philosophy offers originate in a particular religio-cultural context and cannot be separated from it. Given the fact that Aristotle himself “explicitly identifies his first philosophy – or metaphysics – with theology” (Dewey, 1929, 14), it cannot but be the case that reconstruction of classical theories of knowledge and mind have theological implications. In light of these insights offered by Dewey, it is not surprising to find that some of the issues that are central in Iqbal’s task of theological reconstruction are practically the same as ones that Dewey addressed in the course of his reconstruction in philosophy.

The Greek Tradition and Qur’anic Revelation

Iqbal notes that “Greek philosophy has been a great cultural force in the history of Islam” which “very much broadened the outlook of Muslim thinkers” (Iqbal, 3). But, at the same time Greek philosophy “on the whole, obscured [the Muslim thinkers’] vision of the Qur’an” (Iqbal, 3). He goes on to note: “It took them over two hundred years to perceive – though not quite clearly – that the spirit of the Qur’an was essentially anti-classical . . .” (Iqbal, 3). While the philosophy of the ancient world made valuable contributions to human civilization, it has severe limitations:

There is no doubt that the ancient world produced some great systems of philosophy at a time when man was comparatively primitive and governed more or less by suggestion. But we must not forget that this system-building in the ancient world was the work of abstract thought which cannot go beyond the systematization of vague religious beliefs and traditions, and gives us no hold on the concrete situations of life. (Iqbal, 100)

For Iqbal the term “concrete situations of life” mean the changing situations that human beings encounter in the empirical world of nature. Contemplative, abstract thought can go only so far in dealing with the “concrete situations in life.” The “anti-classical spirit” of the Qur’an is illustrated by the fact that the “Qur’an is a book which emphasizes ‘deed’ rather than ‘idea’” (Iqbal, xlv). After about two hundred years of absorbing Greek philosophy uncritically, Muslim thinkers finally perceived that something was fundamentally amiss “and the result of this perception was a kind of intellectual revolt, the full significance of which has not been realized even up to the present day” (Iqbal, 3).

Iqbal goes on to note: “This intellectual revolt against Greek philosophy manifests itself in all departments of thought” (Iqbal, 102) including mathematics, astronomy, medicine, metaphysics and “appears as a most well-defined phenomenon in the Muslim criticism of Greek Logic” (Iqbal, 102). One way to illustrate the difference between the spirit of the Qur’an and Greek philosophy is to look at their respective attitudes towards the world of nature, the flow of history, and the human self. Paul Ricoeur’s distinction between the “hermeneutics of proclamation” and the “phenomenology of manifestation” (Ricoeur, 48) proves to be quite helpful at this point. The Qur’an sees the knowledge and wisdom contained in the Revealed Word to be so intimately linked with nature, history, and the human being that it uses the same word to describe the composition of the Qur’anic Self and the character of the non-Qur’anic Other – *āya* (pl. *āyāt*).

In Ricoeur's terms both the "hermeneutics of proclamation" and the "phenomenology of manifestation" are composed of the *āyāt* of Allah. This word is often translated as "verse" – thus the Qur'an is composed of more than 6000 *āyāt* (verses). Two of the many examples that could be cited from the Qur'an in this regard are: "Ta. Sin. These are the *āyāt* of the Qur'an – a divine writ clear in itself and clearly showing the truth: a guidance and a glad tiding to the believers ..." (26:1–2) and "Alif. Lam. Ra. These are the *āyāt* of a Clear Book: behold, We have sent it down as an Arabic Qur'an so that you might understand" (12:1–2).

While the translation of *āya* as "verse" is correct, it is insufficient because *āya* also means "sign, token, mark; miracle; wonder, marvel, prodigy; model, exemplar, paragon, masterpiece" (Wehr, 36). Consequently each verse of the Qur'an is also a sign, token and/or exemplar of something (i.e. God) for someone (i.e. human beings). Iqbal draws our attention to the fact that the Qur'an points to "verses" outside of itself. He notes that the "Qur'an declares" the "unity of inner experience" and "History and Nature" as being "three sources of knowledge" (Iqbal, 77). He cites a number of verses from the Qur'an to support his claim that the Qur'an identifies nature, history, and the human self as three other locations where the *āyāt* of God are to be found (i.e. 16:12, 24:44, 3:190–91):

There is no doubt that the treatment of religious experience, as a source of Divine knowledge, is historically prior to other regions of human experience for the same purpose. The Qur'an, recognizing that the empirical attitude is an indispensable stage in the spiritual life of humanity, attaches equal importance to all regions of human experience as yielding knowledge of the Ultimate Reality which reveals its symbols both within and without. (Iqbal, 12)

The *āyāt* of the Qur'an themselves state that "symbols of the sacred" are not the exclusive province of the revealed word. Iqbal skillfully uses the manner in which the Qur'an employs the word *āya* with respect to nature, history, and the self to contrast the spirit of the Qur'an with the spirit of Greek philosophy. One of the key goals in drawing this contrast is to show that the Qur'an confers metaphysical dignity upon nature, history, and the human being in a way that is not even theoretically possible in Greek philosophy.

With respect to the world of nature, Iqbal begins the discussion by looking at Socrates' attitude towards the natural environment and Plato's attitude towards human sense perception. For Socrates, the proper subject of study for human beings was the human world itself, not the world of nature:

Socrates concentrated his attention on the human world alone. To him the proper study of man was man and not the world of plants, insects, and stars. How unlike the spirit of the Qur'an, which sees in the humble bee a recipient of Divine inspiration and constantly calls upon the reader to observe the perpetual change of the winds, the alternation of day and night, the clouds, the starry heavens, and the planets swimming through infinite space! (Iqbal, 3)

Here Iqbal is alluding to the Qur'anic passages that draw the believers' attention towards the bee constructing its beehive (16:68–9), the dynamics of weather and the passage of time (2:164, 24:43–4, 30:48), and the starry heavens above (15:16, 25:6, 37:6) – all in order to better understand Ultimate Reality.

While Socrates had a skeptical attitude towards the non-human natural environment, Plato had a skeptical attitude towards human sense perception. For Plato, sensory perception could help the individual study the material realm alone, but Ultimate Reality was to be found in the ideal realm. Sense perception could provide no reliable knowledge about

the ideal realm, or true reality, and was therefore to be shunned in the human search for knowledge. There is a logical connection between Socrates' attitude towards the world of nature and Plato's attitude towards sensory perception. Iqbal notes: "As a true disciple of Socrates, Plato despised sense perception which, in his view, yielded mere opinion and no real knowledge" (Iqbal, 1996, 3). Countering Plato's skeptical attitude towards sense perception, Iqbal notes: "How unlike the Qur'an, which regards 'hearing' and 'sight' as the most valuable Divine gifts and declares them to be accountable to God for their activity in this world" (Iqbal, 3). Here Iqbal is alluding to the Qur'anic passages that encourage the believers to use their sense perceptions wisely (16:78, 23:78, 32:9) as they interact with their natural environment and warns them of the consequences of the neglect or abuse of these Divinely bestowed gifts (17:36).

It is perhaps in his criticism of the Mu'tazilah that Iqbal most succinctly captures the spirit of the Qur'an on this particular issue. He notes that the Mu'tazilah failed to recognize the fact that "in the domain of knowledge – scientific or religious – complete independence of thought from concrete experience is not possible" (Iqbal, 4). Whereas classical Greek thought sought to free human thought from the shackles of material reality in the search for knowledge, the Qur'an has a "concrete spirit" (Iqbal, 102) and an "empirical attitude" (Iqbal, 11) that demands sensual encounter with the *āyāt* in nature in the search for both scientific and religious knowledge:

No doubt, the immediate purpose of the Qur'an in this reflective observation of Nature is to awaken in man the consciousness of that of which Nature is regarded a symbol. But the point to note is the general empirical attitude of the Qur'an ... It was a great point to awaken the empirical spirit in an age which renounced the visible as of no value in men's search after God. (Iqbal, 11)

Commenting on the final outcome of the attempt to interpret the Qur'an while still under the influence of Greek categories of thought, Iqbal notes: "In view of the concrete spirit of the Qur'an, and the speculative nature of Greek philosophy which enjoyed theory and was neglectful of fact, this attempt was foredoomed to failure" (Iqbal, 102). Keeping in mind Socrates' attitude towards the non-human world and Plato's attitude towards sense perception, this attempt was indeed "foredoomed to failure" because:

The Qur'an sees signs of the Ultimate Reality in the 'sun', the 'moon', the lengthening out of shadows', 'the alternation of day and night', 'the variety of human colors and tongues', the alternation of the days of success and reverse among peoples' – in fact in the whole of nature as revealed to the sense-perception of man. And the Muslim's duty is to reflect on these signs and not to pass them by 'as if he is dead and blind', for he 'who does not see these signs in this life will remain blind to the realities of the life to come. (Iqbal, 102)

In this passage Iqbal is referring to 41:37, 25:45, 10:6, 30:22, and 3:140 which identify phenomena in nature as the "verses" of God and 25:73 and 17:72 which urge the believer to use her sense perception wisely to study these phenomena.

Iqbal notes that upon realizing their gross overestimation of Greek thought, Muslim thinkers began to look for alternatives. This was a natural outcome because "dissatisfaction with purely speculative philosophy" led to a "search for a surer method of knowledge" (Iqbal, 102). One of the most important discoveries that this surer "method of knowledge" made possible is the fact that the universe is not a completed, static, finished product – but a dynamic, unfolding process. Interspersing passage from the Qur'an with his own words, Iqbal notes:

[T]he universe is so constituted that it is capable of extension:

(God) adds to His creation what He wills (35:1).

It is not a block universe, a finished product, immobile and incapable of change. Deep in its inner being lies, perhaps, the dream of a new birth:

Say – go through the earth and see how God hath brought forth all creation; hereafter will He give it another birth (29:20). (Iqbal, 8)

As noted in the previous section, Aristotelean physics is incapable of even theoretically imagining the universe as a dynamic, evolving process.

The contrast between the spirit of the Qur'an and the Greek tradition is as stark in terms of their respective attitudes towards time and history as it is in their attitude towards the sensual encounter with the world of nature. Iqbal notes that "for the Greeks time was either unreal, as in Plato and Zeno, or moved in a circle, as in Heraclitus and the Stoics" (Iqbal, 113). If time is unreal then for Iqbal it means that "[e]vents do not happen; we simply meet them" (Iqbal, 31). If time moves in a circle then it means that the possibility of novelty and creation is ruled out: "Eternal recurrence is not eternal creation; it is eternal repetition" (Iqbal, 113). In both cases we have to regard "the future as something already given, as indubitably fixed as the past" (Iqbal, 31). In contrast "all lines of Muslim thought converge on a dynamic conception of the universe" (Iqbal, 110). This dynamic conception requires the affirmation of the "reality of time" in which time is conceived as "free creative movement" (Iqbal, 31). This means that not only is the universe a dynamic process in a physical sense, but also that this process is an open process. The future is not solely determined by events in the past or by eternal, immutable laws. Decisions made in the present can have a causal effect on the shape of the future. The starkly contrasting attitudes towards time comes to the fore when the Greek teachings about the relationship between God and time is compared with the Qur'anic teaching. In the former case time is the anti-thesis of God, in the latter case time is not just an *āya* of God, it is almost identical with Him.

Robert Jenson summarizes the Greek conception of the relationship between time and God in these words:

Greece identified deity by metaphysical predicates. Basic among them is timelessness; immunity to time's contingencies and particularly to death, by which temporality is enforced. The Greeks' great fear was brought to a formula by Aristotle: "Can it be that all things pass away?" Mythologically: "Father Time eats his children – will he get them all?" All Greek religion and its theology, that is "philosophy", is a passionate insistence that the answer be no. Deity is that in which the quest is fulfilled: the Olympian gods, for example, were precisely "the immortals" and nothing else was required for their deity. (Jenson, 94)

In Greek pagan theology, the concepts of time and divinity are considered to be mutually exclusive – just as ideal/real and material/spiritual are mutually exclusive. The divine stands above and beyond the temporal flux of events and is not affected by them in any way. Jenson details this point further:

The interpretation of eternity as the contradictory of time both established Mediterranean antiquity's spiritual security and threatened its specific damnation. Timeless deity was posited to be the ordering foundation of time's otherwise meaninglessly fleeting sequences. But since the relation of eternity to time was grasped by mere negation, the difference between eternity and time could also come to be felt as simple discontinuity between two sorts of reality, in one of which we are confined and in the other of which all of life and truth are located. (Jenson, 94).

This means that those who inhabit the temporal domain will have to get beyond the illusions and mirages thrown up by temporal flux in order to attain true knowledge – just as they had to look beyond the phenomena in the world of nature in order to approach the Ultimate Reality.

While the Greek tradition sees a yawning abyss separating God and time, Iqbal argues that there is an intimate relationship between the two since the Qur'an sees time as being among the greatest *āyāt* of God:

[T]his mysterious swing and impulse of the universe, this noiseless swim of time which appears to us, human beings, as the movement of day and night, is regarded by the Qur'an as one of the great signs of God:

God causeth the day and the night to take their turn. Verily in this is teaching for men of insight (24:44). (Iqbal, 8)

He goes on to note that the relationship between time and the divine is even more intimate than that alluded to in the previous in (24:44):

The problem of time has always drawn the attention of Muslim thinkers and mystics. This seems to be partly due to the fact that, according to the Qur'an, the alteration of day and night is one of the greatest signs of God, and partly to the Prophet's identification of God with *Dahr* (time) in a well-known tradition ... (Iqbal, 58)

At this point he refers back to an earlier point in the text where he cited the well-known hadith of the Prophet: "Do not vilify time, for time is God" (cited by Iqbal, 8). Iqbal sees God and time to be almost identical because it is in the progressive passage of time that human beings can see God's glory manifesting itself anew. He notes: "The Qur'anic view of the 'alternation of day and night' [2:164, 3:190, 10:6] [is] a symbol of the Ultimate Reality which 'appears in a fresh glory every moment' [55:29]" (Iqbal, 113). The "fresh glory" for its part manifests itself in the form of a constantly expanding universe in which the latent "infinite creative possibilities" (Iqbal, 48) of God actualize themselves – and this expansion takes place with the passage of time. Since "God's life is self-revelation" and this self-revelation manifests itself (partially) "in His creative activity and the infinite scope of His creative vision" (Iqbal, 48), the constant emergence of novel phenomena in the universe with the continuous passage of time can be considered almost identical with God Himself.

Iqbal credits Ibn Khaldun for having most cogently articulated the Qur'anic conception of time and history. Ibn Khaldun saw history "as a continuous, collective movement, a real inevitable development in time" (Iqbal, 113). Iqbal goes on to note:

The point of interest in this view of history is the way in which Ibn Khaldun conceives the process of change. His conception is of infinite importance because of the implications that history, as a continuous movement in time, is a genuinely creative moment and not a movement whose path is already determined. (Iqbal, 113).

The fact that we are able to observe "genuinely creative moment[s]" in history – moments that have not been pre-determined – serves as an *āya* for the creative activity of God:

If time is real, and not a mere repetition of homogenous events which make conscious experience a delusion, then every moment in the life of Reality is original, giving birth to what is absolutely novel and unforeseeable. "*Everyday doth some new work employ Him*" [55:29], says the Qur'an. (Iqbal, 40)

Comparing Ibn Khaldun's view of history to the classical Greek view of time and history, Iqbal states:

In the work of this genius the anti-classical spirit of the Qur'an scores its final victory over Greek thought; for with the Greeks time was either unreal, as in Plato and Zeno, or moved in a circle, as in Heraclitus and the Stoics. Whatever may be the criterion by which to judge the forward steps of a creative movement, the movement itself, if conceived as cyclic, ceases to be creative. Eternal recurrence is not eternal creation; it is eternal repetition. (Iqbal, 113).

In addition to nature and history, the Qur'an identifies the human self as the *āya* of God. The Qur'anic view of the human self is quite distinct from view of classical philosophy that shaped Mediterranean culture and the dualistic Magian view that shaped much of Asian culture. Various schools of thought in the Muslim world were heavily influenced by Greek philosophy and Magian thought to different degrees and in both cases the unique perspective of the Qur'an was compromised. Under the influence of Greek thought many Muslim philosophers "regarded the soul as a finer kind of matter or a mere accident which dies with the body and is re-created on the Day of Judgement" (Iqbal, 77). Magian thought (dominating much of Middle and Western Asia) for its part "has a structurally dualistic soul-picture which we find more or less reflected in the theological thought of Islam" (Iqbal, 77). While the dominant philosophical and theological schools of thought in the Muslim world were channeling Greek and Magian ideas, Iqbal posits notes that certain schools of devotional Sufism "alone tried to understand the meaning of the unity of inner experience which the Qur'an declares to be one of the three sources of knowledge, the other two being history and nature" (Iqbal, 77). Not unlike his valuation of Ibn Khaldun's conception of history, Iqbal credits the mystic Mansur Hallaj with most cogently articulating the Qur'anic conception of the reality of the human self:

The development of this experience in the religious life of Islam reached its culmination in the well-known words of Hallaj – "I am the creative truth." ... The true interpretation of his experience, ..., is not the drop slipping into the sea, but the realization and bold affirmation in an undying phrase of the reality and permanence of the human ego in a profounder personality. (Iqbal, 77)

Combining the insights of Rumi with developments in modern science and philosophy, Iqbal offers his own interpretation of the Qur'anic conception of the "human ego" or "self." He notes that the Qur'an "emphasizes the individuality and uniqueness of each human being in a simple yet forceful manner" and views each human being as "a unique individuality" (Iqbal, 76). Iqbal's focus on the importance of individual personality can be better understood in the context of the classical Greek attitude towards the "unique individual." In spite of real and apparent differences on a whole range of other issues, there is one point on which Plato, Aristotle, Heraclitus, Parmenides, the Stoics, and the Epicureans all agree – the "unique individual" is nothing but an illusion. In stark contrast, Iqbal notes that the characteristics of "uniqueness" and "individuality" are the primary characteristics by which the Qur'an describes God:

[T]he ultimate ground of all experience [is] a rationally directed creative will which we have found reasons to describe as an ego. In order to emphasize the individuality of the Ultimate Ego the Qur'an gives Him the proper name Allah, and further defines Him as follows:

Say: Allah is One:

All things depend on Him;

He begetteth not, and He is not begotten;

And there is none like unto Him (112:1-4). (Iqbal, 50)

Then Iqbal goes on to cite the well-known *āyat al-nur*, “verse of light”: *God is the light of the Heaven and of the earth. His light is like a niche in which is a lamp – the lamp encased in a glass – the glass as it were, a star* (24:35). This is the commentary that he offers on this verse:

No doubt, the opening sentence of the verse gives the impression of an escape from an individualistic conception of God. But when we follow the metaphor of light in the rest of the verse, it gives just the opposite impression. The development of the metaphor is meant rather to exclude the suggestion of a formless cosmic element by centralizing the light in a flame which is further individualized by its encasement in a glass likened unto a well-defined star. (Iqbal, 51)

After noting that modern physics has laid bare certain characteristics of light that were not known before and that we must take these findings into consideration when we are interpreting scripture, Iqbal notes:

The metaphor of light as applied to God, therefore, must, in view of modern knowledge, be taken to suggest the Absoluteness of God and not His Omnipresence which easily lends itself to a pantheistic interpretation. (Iqbal, 51)

Iqbal uses the philosophical term “Ultimate Ego” to describe the most unique of all individuals. He describes the relationship of the Ultimate Ego to the rest of the universe in these words:

I have conceived the Ultimate Reality as an Ego; and I must add now that from the Ultimate Ego only egos proceed. The creative energy of the Ultimate Ego, in whom deed and thought are identical, functions as ego-unities. The world, in all its details, from the mechanical movement of what we call the atom of matter to the free movement of thought in the human ego, is the self-revelation of the “Great I am”. Every atom of Divine energy, however low in the scale of existence, is an ego. But there are degrees in the expression of egohood. Throughout the entire gamut of being runs the gradually rising note of egohood until it reaches its perfection in man. That is why the Qur’an declares the Ultimate Ego to be “*nearer to man than his own neck-vein*” [50:16]. (Iqbal, 57)

The following passage hints at the fact that the entire universe and everything in it is made up of egos or selves proceeding from the Ultimate Ego:

Limitless is He in His glory, and sublimely, immeasurably exalted above anything that men may say [about Him]. The seven heavens and the earth – and all that they contain – extol His limitless glory: and there is not a single thing [therein] that does not extol His limitless glory and praise: but [O Men] you fail to grasp the manner of their glorifying Him. (17:43-4)

The following *āya* explicitly states that the Ultimate Ego is closer to human beings than their own jugular vein: “Now, Verily, it is We who have created man, and We know what his innermost self whispers within him: for We are closer to him than his neck-vein” (50:16). While human beings share the characteristic of having a “self” or “ego” with the entire created universe, they are set apart from the rest of creation by the fact that “egohood” reaches its culmination in the unique, individual human being. Consequently the manner in which the human ego can “extol His limitless glory” is qualitatively different from the manner in which the other egos in the universe can extol the limitless glory of the Ultimate Ego:

Man ... in whom egohood has reached its relative perfection, occupies a genuine place in the heart of Divine creative energy, and thus possesses a much higher degree of reality than things around him. Of all the creations of God he alone is capable of consciously participating in the creative life of his Maker.

Endowed with the power to imagine a better world, and to mould what is into what ought to be, the ego in him aspires, in the interests of an increasingly unique and comprehensive individuality, to exploit all the various environments on which he may be called upon to operate during the course of an endless career. (Iqbal, 58)

While other egos can extol the glory of their Lord in their own way, it is only the human ego that is capable of extolling the glory of his/her Lord by “participating in the creative life of [the] Maker”. Iqbal does not shrink from addressing the thorny issue that emerges with the emergence of the human ego who shares certain attributes with the Ultimate Ego:

No doubt, the emergence of egos endowed with the power of spontaneous and hence unforeseeable action is, in a sense, a limitation on the freedom of the all-inclusive Ego. But this limitation is not externally imposed. It is born out of His own creative freedom whereby He has chosen finite egos to be participators of His life, power, and freedom. (Iqbal, 63f.)

Given the fact that human beings can share in the “life, power, and freedom” of God, the possibility opens up that they “perhaps, . . . become a permanent element in the constitution of being” (Iqbal, 9). Even more so, given the fact that the universe is not a static, finished block but a dynamic evolving process, human beings have the potential to shape the direction in which the universe evolves.

From the foregoing discussion it is obvious that Iqbal’s project of reconstruction of religious thought in Islam centers on conferring metaphysical dignity on the material universe, historical time, and the human self. He uses the most authoritative source in the Islamic tradition, the Qur’an, to show that the Holy Book considers non-divine reality to be no less a sign pointing towards God than the Divine Word itself. Keeping in mind that this point will be detailed in Section Four, it is worth noting here that the Qur’anic portrayal of the universe, history, and the human self shares some key characteristics with the picture painted by modern science. Iqbal argues that a major shortcoming of modern Islamic thought is that it has not been able to receive “any fresh inspiration from modern thought and experience” at a point in history when “the demand for a scientific form of religious knowledge is only natural” (Iqbal, xlv). Given the fact that recent developments in the sciences have laid bare aspects of reality and opened vistas of inquiry that were not possible before, “the day is not far off when Religion and Science may discover hitherto unsuspected mutual harmonies” (Iqbal, xlvi). Iqbal’s interpretation of the Qur’anic passages dealing with nature, history, and the human being is a promising first step in laying bare these “hitherto unsuspected mutual harmonies.” This interpretation shows that the Qur’an sees a dynamic, evolving universe in which novelty and freedom are ever-present potentialities, whose actualization can be effected by human efforts and ideals.

Looked at in light of the discussion in Section One, it is obvious that the similarity between Dewey’s reconstruction in philosophy and Iqbal reconstruction of religious thought is much deeper than the similarity in the titles. Both of them are concerned with very similar issues and have identified practically the same obstacles and pointed to the same resources for overcoming the obstacles. The difference between the two appears to be one of emphasis only. Dewey is more focused on epistemological issues and Iqbal focuses his attention on theology. Iqbal’s project of theological reconstruction begins with conferring metaphysical dignity on that which classical metaphysics has disdained and belittled, (i.e. nature, time, and the human self). This parallels Dewey’s conferral of epistemological dignity on matter, temporal flux, and the human element in his task of reconstruction in philosophy. Both thinkers go on to identify the continued influence of

the classical tradition as the primary obstacle to the much needed task of reconstruction. And finally, both Iqbal and Dewey see modern science and thought offering valuable resources for the task. In the next section we will look at the constructive role that Peirce's insights can play in the task of reconstruction. We will see that his pragmatism offers the philosophical warrants for the task of the "conferral of dignity," his semiotics offers the tools for conceptually capturing growth, relationships, and context in a constantly evolving universe, and his triadic logic offers a method of inquiry that overcomes the limitations of binary logic.

Section Three: Pragmatic Semiotics and Scientific Inquiry

IN HIS PAPER TITLED “NOTES ON SCIENTIFIC PHILOSOPHY” Peirce notes that he is interested in “philosophy” of a very particular kind:

The kind of philosophy which interests me and must, I think, interest everybody is that philosophy, which uses the most rational methods it can devise, for finding out the little that can as yet be found out about the universe of mind and matter from those observations which every person can make in every hour of his waking life. (1.126)

For Peirce philosophy is not some detached “love of wisdom” which is set apart from everyday mundane reality beyond the reach of ordinary human beings. It is the pursuit of knowledge which can be attained by the disciplined study of everyday occurrence by ordinary human beings. The contrast between Peirce’s conception of philosophy and the orthodox, classical conception becomes even more pronounced in light of the fact that “most philosophers set up a pretension of knowing all that there is to know – a pretension calculated to disgust anybody who is at home in any real science” (1.128). The primary reason why this pretension is sure to disgust a scientific mind is because the “lover of wisdom” thinks that philosophical inquiry is nothing more than disinterested contemplation of timeless truth and has nothing to do with the scientific exploration of ordinary, earthly, mundane, phenomena. Peirce shows his disdain for this attitude:

All we have to do is to turn our backs upon all such truly vicious conduct, and we shall find ourselves enjoying the advantages of having an almost virgin soil to till, where a given amount of really scientific work will bring an extraordinary harvest, and that a harvest of very fundamental truth of exceptional value from every point of view. (1.128)

Peirce notes that there are two reasons that make “the study of obvious phenomena ... particularly interesting” (1.127). The first reason is one which philosophy shares with all other sciences:

The first answer is that the spirit in which, as it seems to me, philosophy ought to be studied is the spirit in which every branch of science ought to be studied; namely, the spirit of joy in learning ourselves and in making others acquainted with the glories of God. (1.127)

From the very outset, Peirce’s understanding of philosophy has a theological and a scientific dimension. The scientific dimension comes in the form of classifying philosophy as a science. The theological dimension comes in the form of the first reason for studying philosophy. The second reason for studying philosophy is that “the special sciences are obliged to take for granted a number of most important propositions, because their

ways of working afford no means of bringing these propositions to the test” (1.129). Irrespective of whether we are talking about physics, chemistry, and biology or sociology, economics, and history, we find that all sciences “assume general principles that cannot be proved or disproved by their ordinary methods of work” (1.129). In each of special sciences these “general principles” are expressed in the form of “axioms” that are taken for granted and it is these “axioms” that are the object of inquiry for the philosopher: “The philosopher alone is equipped with the facilities for examining such ‘axioms’ and for determining the degree to which confidence may safely be reposed in them” (1.129).

While the “philosopher alone is equipped” to examine the “axioms” of the special sciences, the practitioner of scientific philosophy begins the examination by first consciously dispensing with certain philosophical axioms of his own. He does this by taking the philosophical lessons that the method of scientific inquiry teaches seriously. There is no shortage of debate and discussion regarding the specifics of the scientific method. In spite of the variety of views and disagreements on the specifics and even on some of the generals, the one thing that all descriptions of the scientific method agree upon is that the method involves passing judgment on an entire population based on observation of a sample of the population. For Peirce, this point contains a most important philosophical insight:

All positive reasoning is of the nature of judging the proportion of something in a whole collection by the proportion found in a sample. Accordingly, there are three things to which we can never hope to attain by reasoning, namely, absolute certainty, absolute exactitude, absolute universality ... Now if exactitude, certitude, and universality are not to be attained by reasoning, there is certainly no other means by which they can be reached. (1.141-2)

In light of this observation, we can say that the scientific philosophy begins with dispensing with the very notion of Aristotle’s *episteme*. The type of knowledge which Aristotle considered to be the zenith of philosophical inquiry, is shown by Peirce to be unattainable in principle.

Whereas as one of the “axioms” of scientific philosophy is based on the findings of the scientific method, another one is based on the findings of modern science. Keeping in mind that Peirce died in 1914, his conception of the universe is as much at odds with the classical picture of the universe, as his conception of knowledge. More than two decades before both Georges Lemaitre and Edwin Hubble, Peirce noted: “The creation of the universe ... did not take place during a certain busy week, in the year 4004 B.C., but is going on today and will never be done ...” (1.615). For Peirce the universe is not merely expanding as understood by physics – it is an “evolving” universe. Even a cursory look at the history of the universe shows that it began as physical matter, from which biological life emerged, from which in turn psychological thought emerged. Peirce uses the biological conception of “evolution” to describe this developmental process. Consequently, evolution is not something that is limited to the domain of biology. It characterizes the phenomena studied by physics, chemistry, psychology, as well as the social sciences and humanities. If it is indeed the case that creation is “going on today and will never be done,” then the process of evolution will also continue indefinitely in the physical universe, the biological domain, and the world of ideas.

In bringing the concept of an expanding universe into relationship with the conception of biological evolution, Peirce draws our attention to the fact of emergent novelty in the universe. Peirce offers a rather precise definition of “evolution.” For him this term refers to the simultaneous increase in diversity and regularity in the universe (1.174). A close

look at the way that diversity increases in the universe shows that it is of two types. Some of the increase could be explained with reference to knowledge about the universe prior to the observed increase. This type of increase strengthens the hypothesis that there is regularity in the universe. However, there is a second type of increase that cannot be explained, understood, or even anticipated given the material conditions prior to its emergence. This second type of increase upsets all expectations and possible anticipations. This type of increase represents the emergence of genuine novelty in the universe (1.174). For Peirce this novelty is as much a characteristic of the universe as the regular expansion discovered by physics and the evolution discovered by biology. For Peirce philosophical inquiry begins in and with the phenomena in this constantly expanding, evolving universe. It moves on to identifying and evaluating the presuppositions, axioms, and postulates that make scientific inquiry possible – all in the “spirit of joy in learning ourselves and in making others acquainted with the glories of God.”

Combining the lessons learned from the method of scientific inquiry with the lessons learned from the scientific description of the universe, we come up with the basic axioms of Peirce’s scientific philosophy: “fallibilism, continuity, and evolution.” Reasoning backwards from the fact of a continuously expanding universe, it is easy to see how any knowledge claim made at any point in time can only be probabilistic. Not only is the knowledge claim being made based on observing only a sample from the population as a whole, the population itself is in the process of growing and expanding – with the possibility of previously unobserved (and even unimagined) novelty being a real possibility. In the light of post-Newtonian physics, it is easy to see that one cannot draw exact, precise lines of division in empirical reality – especially the empirical reality experienced as time. Hence along with continuous evolution there is ever-present continuity between and among phenomena. Furthermore, the observer is an irreducible element in the phenomenon that is being observed – and the knowledge claim potentially reveals as much about the observer as it does about the observed phenomena.

Peirce describes his conception of “scientific philosophy” more precisely by labeling it “pragmatism” and providing the following definition:

[P]ragmatism is, in itself, no doctrine of metaphysics, no attempt to determine any truth of things. It is merely a method of ascertaining the meanings of hard words and of abstract concepts. All pragmatists of whatsoever stripe will cordially assent to that statement ...

All pragmatists will further agree that their method of ascertaining the meanings of words and concepts is no other than that experimental method by which all the successful sciences (in which number nobody in his senses would include metaphysics) have reached the degrees of certainty that are severally proper to them today; ... (5.465)

This definition is significant in the context of the present discussion because it shows that some of the key concerns of pragmatism are practically the same as those of analytic philosophy. To begin with the definition of pragmatism as “in itself, no doctrine of metaphysics, no attempt to determine any truth of things. It is merely a method of ascertaining the meanings of hard words and of abstract concepts” is practically the same as analytic philosophy self-understanding. Secondly, from the very beginning Peirce linked his preferred method of philosophical inquiry to the “experimental method by which all the successful sciences” have attained verifiable and reliable results about facts in the universe. This appreciation of the science and the scientific method is also central to analytic philosophy’s self-understanding. It is on the basis of these parallels that we can consider

Dewey's and Peirce's conception of pragmatism to be a type of analytic philosophy – pragmatic analytic philosophy. Peirce was well aware of the fact that the above cited definition of pragmatism could be interpreted in different ways – and that his interpretation was one among others. As a result, he offered a more precise definition that reflected his own particular conception of pragmatism, which he christened “pragmaticism”:

Consider what effects that might *conceivably* have practical bearings you *conceive* the objects of your *conception* to have. Then, your *conception* of those effects is the whole of your *conception* of the object.

I will restate this in other words, since oftentimes one can thus eliminate some unsuspected source of perplexity to the reader. This time it shall be in the indicative mood, as follows: The entire intellectual purport of any symbol consists in the total of all general modes of rational conduct which, conditionally upon all the possible different circumstances and desires, would ensue upon the acceptance of the symbol. (5.438)

Peirce's method of inquiry begins with the experienced facts in the universe. It then proceeds to offer a hypothesis about the “cause” of the facts, and then tests the validity of the hypothesis by looking at the effects that the hypothesized cause has in the universe. While these two versions of Peirce's definition of pragmatism highlight the centrality of the temporal facts in the universe in his definition, the following version highlights the importance of reasoned reflection:

[T]he true meaning of any product of the intellect lies in whatever unitary determination it would impart to practical conduct under any and every conceivable circumstance, supposing such conduct to be guided by reflexion carried to an ultimate limit. (6.490)

This version of the definition shows that Peirce is aware of the fact that after a cause has been hypothesized about some observed fact in the universe, the effect of the hypothesized cause on practical conduct depends on the guiding principle that has been adopted for such conduct. A number of different guiding principles can be adopted; i.e. tenacious belief, the authority of tradition, or a priori reasoning. While Peirce acknowledges the validity and appreciates the value of these three methods of fixing belief, he prefers the scientific method. For Peirce “reflexion carried to an ultimate limit” or experimental reasoning is the preferred guiding principle – which is the guiding principle of the scientific method. This “reflection” is not some abstract reasoning because scientific intelligence is an intelligence that is “capable of learning from experience” (2.227).

From even this brief description of Peirce's understanding of philosophy we can see that Peirce's pragmatism begins in the world of nature, embraces flux in all its forms (i.e., expansion, evolution, and novelty), and puts human experience and purposes at the center of inquiry. In the context of the discussion in Section One, we see that the very definition of philosophy offered by Peirce confers epistemological dignity on the material world, temporal flux, and human needs and purposes. By making the learning and teaching of the “glories of God” the ultimate goal of all science, philosophy as much as any other, Peirce points to the metaphysical dignity of all earthly phenomena – natural, historical, and human alike. In other words, Peirce's definition of philosophy takes the first step of reconstruction by conferring dignity on phenomena that classical philosophy had condemned as being of no epistemological or metaphysical value.

While pragmatism offers the philosophical warrant for taking experiences in and of the universe as the starting point of inquiry, it does not offer an account of the conceptual tools to be used during the course of inquiry – for this we have to turn to Peirce's semiotics. Peirce offers semiotics as a response to the question: “How is thought about experience

possible?” Peirce’s answer to this question is that “We think only in signs. These mental signs are of a mixed nature; the symbol part of them are called concepts” (2.302). Consequently, wherever there is thought there are signs. More specifically his theory of signs is concerned with a very particular type of thought – scientific thought. Peirce’s theory of signs offers an account “as to what *must* be the character of all signs used by a ‘scientific’ intelligence, that is to say, by an intelligence capable of learning by experience” (2.227). Semiotics is Peirce’s doctrine of the characteristics, types, and function of signs.

The most basic unit of Peirce’s semiotics is the triadic “sign” – consisting of the representamen (or sign-vehicle), object, and interpretant. The following is Peirce’s most oft-cited definition of a sign: “Anything which determines something else (its *interpretant*) to refer to an object to which it itself refers (its *object*) in the same way, the interpretant becoming in turn a sign and so on *ad infinitum*” (2.303). Summarily stated, a sign is made up of three elements: representamen, object, and interpretant. A note of caution is needed here because sometimes Peirce uses the word “sign” to refer to the triadic relationship as a whole and sometimes he uses it to refer to one of the three elements in the sign (the representamen or sign-vehicle). To avoid confusion, the term “sign-vehicle” will be used when referring to one of the three parts of a sign. In addition to providing an account of the constituent elements of a sign, Peirce’s semiotics explores the following questions:

- What are the characteristics of a sign?
- What are the different types of signs?
- What are the functions of a sign?

When we look at each of three questions in turn we find that Peirce’s semiotics provides an account of three different but inter-related issues. First, it gives an account of the different types of signs that are possible. Second, it gives an account of the different types of objects that can be signified. And third, it describes the different perspectives from which the objects can be studied. These three issues are detailed in the form of his three trichotomies of signs. Peirce notes:

Signs are divisible by three trichotomies; first, according as the sign in itself is a mere quality, is an actual existent, or is a general law; secondly, according as the relation of the sign to its object consists in the sign’s having some character in itself, or in some existential relation to that object, or in its relation to an interpretant; thirdly, according as its Interpretant represents it as a sign of possibility, or as a sign of fact or a sign of reason. (2.243).

The first of the three trichotomies offers a typology of the characteristics of a sign without any concern for the relationship of the sign to an object or an interpretant. At this level “a Sign may be termed a *Qualisign*, a *Sinsign*, or a *Legisign*” (2.244). As a *Qualisign*, a sign “is a quality which is a Sign. It cannot actually act as a sign until it is embodied; but the embodiment has nothing to do with its character as a sign” (2.244). The terms “red” and “ten” are examples of *Qualisigns*. Both of these terms refer to a quality – the first to the quality of “redness” and the second to the quality of “tennes.” In both cases the terms by themselves “cannot actually act as a sign.” To become an actual sign they have to be embodied in (something like) “red apple” or “ten apples.” But the character of a *Qualisign* as a sign is not in the least affected by its embodiment or lack thereof.

In contrast to a *Qualisign* which is pure quality or possibility as a sign, a *Sinsign* “is an actual existent thing or event which is a sign” (2.245). Here we are looking at actual brute

facts in the universe as signs, the facts of “trees,” “atoms,” “gravity,” “politics,” “capitalism,” “religion,” “stock market,” “pilgrimage,” etc. Each of these is a fact in the universe and hence a Sinsign. As an “actual existent thing or event,” the Sinsign shares some characteristics with the Qualisign while simultaneously having its own unique and distinguishing characteristics. Since an “actual existent thing or event” is only “so through its qualities” all Sinsigns “involve a qualisign, or rather, several qualisigns” (2.245). But at the same time, the Sinsign involve a “peculiar kind” of Qualisign – only those Qualisigns that are capable of “being actually embodied” (2.245). For example, while the integers 10 and -10 are both qualisigns, only 10 can be embodied in some fact or existent.

In addition to pure quality and brute facts being signs, habit-law² can also be a sign – Peirce calls this latter type of sign a Legisign and notes that a Legisign “is not a single object, but a general type which, it has been agreed, shall be significant” (2.246). Being a “general type,” the Legisign is not a “fact” or “existent” but something that shapes facts and existents which are its Replica: “Every legisign signifies through an instance of its application, which may be termed a *Replica* of it” (2.246). Peirce goes on to illustrate the relationship between a Legisign and a Replica through an example:

Thus, the word ‘the’ will usually occur from fifteen to twenty-five times on a page. It is in all these occurrences one and the same word, the same legisign. Each single instance of it is a Replica. The Replica is a Sinsign. Thus, every Legisign requires Sinsigns. (2.246)

Similar to the fact that a peculiar type of Qualisign is embodied in a Sinsign, a peculiar type of Sinsign (i.e., the Replica) is contained within a Legisign and it is through the Replica-Sinsign that the Legisign is instantiated. Peirce emphasizes that the characteristic of “significance” is something that is peculiar to the Legisign. A Qualisign or Sinsign becomes significant only by virtue of some habit-law. So while a Legisign needs a peculiar type of Sinsign to be instantiated, the Replica-Sinsign also needs a Legisign: “Nor would the Replica be significant if it were not for the [habit]-law which renders it so” (2.246).

In providing an account of the different characteristics that a sign may possess, the first trichotomy of signs teaches us what type of phenomena a “scientific mind” can think about. Qualisigns make it possible for us to think about qualities (or mere possibility). Sinsigns make it possible for us to think about facts (or actual existents). Legisigns make it possible for us to think about habit-law (or generality). While the first trichotomy describes the different characteristics a particular sign may possess, the second trichotomy describes the different types of signs.

Peirce’s second trichotomy of signs describes the relationship of the sign-vehicle to the Object. At this level “a Sign may be termed an *Icon*, an *Index*, or a *Symbol*” (2.247). Summarily stated, an icon “is a sign which refers to the Object that it denotes merely by virtue of characters of its own . . . whether any such Object actually exists or not” (2.247). An index “is a sign which refers to the Object that it denotes by virtue of being really affected by that Object” (2.248). And a symbol “is a sign which refers to the Object that it denotes by virtue of a [habit]-law . . . which operates to cause the Symbol to be interpreted

² Peirce uses the term “law” in a number of different ways. Sometimes he uses it in the positivistic sense – as a brute fact in the universe. Positivists consider law as brute fact as the cause of observed events. In more than a few places Peirce uses the term “law” in this sense of the Unmoved Mover. At other place he describes “law” not as a brute fact but as a general tendency. In this sense the word “habit” is an appropriate synonym for “law” – and in other places Peirce himself uses “law” and “habit” interchangeably. I will use the term “habit-law” to avoid the confusion, where I think Peirce is using “law” in the sense of general tendency.

as referring to that Object” (2.249). In other words, an icon is a sign that merely suggests, an index is a sign that forces, and a symbol is a sign that shapes.

The characteristic that sets the symbol apart from the icon and index is the fact that in order for a symbol to be a sign all three – sign-vehicle, object, and interpretant – must be present: “A *symbol* is a sign which refers to the Object it denotes by virtue of a [habit]-law, usually an association of general ideas, which operates to cause the Symbol to be interpreted as referring to that Object” (2.249). The Symbol “would lose the character which renders it a sign if there were no interpretant” (2.304). The Symbol is a type of sign that leads the interpretant to refer to the same Object that it itself denotes. Turning the interpretant’s attention towards the Object that it denotes is a crucial function of the Symbol because it is only through the Object that the Symbol can be perceived. Peirce notes that since a Symbol is a type of general “that which is general has its being in the instances which it will determine. There must, therefore, be existent instances of what the Symbol denotes” (2.249). Consequently, while the Symbol itself is neither a fact nor an existent, it shapes and determines facts and existents. Just as an Index has a peculiar type of Icon inside of itself, the Symbol contains a peculiar type of Index: “The Symbol will indirectly, through a sort of Index, be affected by those instances [that instantiate it]: and thus the Symbol will involve a sort of Index, although an Index of a peculiar kind” (2.249). It should also be noted that since the Symbol is “a general type or [habit]-law ... [it] is a Legisign. As such it acts through a Replica” (2.249).

There is another characteristic of the symbol that distinguishes it from the icon and index: “Symbols grow. They come into being by development out of other signs, particularly from icons, or from mixed signs partaking of the nature of icons and symbols” (2.302). With respect to growth Peirce has something very specific in mind: “A symbol, once in being, spreads among the peoples. In use and in experience, its meaning grows. Such words as *force*, *law*, *wealth*, *marriage*, bear for us very different meanings from those they bore to our barbarous ancestors” (2.302). Neither the iconic symbol nor the indexical symbol are capable of capturing this growth. Only a genuine symbol has the ability to conceptually capture both the process of growth and its causes. While the second trichotomy offers a typology of signs, the third trichotomy describes the different functions that a sign performs. The particular function that a sign performs is exceedingly important because the knowledge derived from the study of any phenomena depends on the function used to study it.

The third trichotomy of signs categorizes the sign according to the relationship of the sign-vehicle to its object as it is represented by the interpretant. The interpretant can represent the object as “a sign of possibility or as a sign of fact or a sign of reason” (2.243) or as class-8, class-9, and class-10 signs. There are some experiences that cannot be talked about or described in precise detail. The one phenomenon that fits this description is “feeling” which is “an instance of that sort of element of consciousness which is all that it is positively, in itself, regardless of anything else” (1.306). Class-8 signs are symbolic legisigns that represent feelings, which cannot be otherwise talked about or described. The reason that a feeling cannot be talked about is because: “[A] feeling is immediate consciousness, that is, whatever of consciousness there may be that is immediately present, yet there is no consciousness in it because it is instantaneous. [This is because a] feeling is nothing but a quality and a quality is not conscious: it is a mere possibility” (1.310). In having an aesthetic experience we are having an experience of a class-8 sign – a “feeling, the consciousness of which can be included in an instant of time, passive consciousness

of quality, without recognition or analysis” (1.377). In making possible the experience of “mere possibility,” class-8 signs are not just means to explore fantastical possibilities, they also make it possible to be receptive to real possibilities. Approaching experience by “feeling it” and “seeing it” rather than by “thinking about it” or “describing it” is the hallmark of art in all its various forms, i.e., poetry, painting, music, architecture, and so forth. In looking at a sign-signified relationship as one of mere possibility, the interpretant is playing the role of a Rheme.

As a class-8 sign all phenomena are mere possibilities and there is no objective way to distinguish between mere possibility and actual facts in the universe. Class-9 signs make it possible to distinguish that which is indistinguishable as a class-8 sign because the former are propositional statements about facts in the world and the meaning of these statements is determined by the validity of the claim. The interpretant who represents a symbolic legisign as a class-9 sign, is a Dicisign and is putting forth the claim that this sign actually exists in the world. Class-9 signs make it possible to distinguish “true” from “false” claims. As class-8 signs there is no difference between mermaids, roses, dragons, and lions because as a possibility in the universe, all of them are equally possible. The artist uses her imagination and sees mermaids and roses representing beauty and dragons and lions representing strength – without ever being concerned about the question: “Are there mermaids, roses, dragons, and lions in the world?” But it becomes possible to distinguish between these four phenomena when they are studied as class-9 signs – or looked at with the Dicisign acting as interpretant. When studied as class-9 signs, we reach the conclusion that two of them are factually true and two of them are factually false. The Dicisign also teaches us something about the Rheme that the latter cannot tell us about itself. The former helps us to recognize the fact that there are at least two types of possibilities – pure possibilities and possibilities that can or have become actualities.

In addition to a Rheme and Dicisign, a symbolic legisign can also be represented as an Argument (or a class-10 sign). In this case the interpretant, as an Argument, is claiming that the symbolic legisign is a sign of reason or habit-law in the universe and not just a sign of possibility or fact. Peirce uses the term “law” in a very particular sense here – the sense is captured by showing the relationship of “law” to facts (class-9 signs) and possibility (class-8 signs). Peirce notes that “a Rheme is a sign which is understood to represent its object in its characters merely; that a Dicisign is a sign which is understood to represent its object in respect to actual existence, and that an Argument is a Sign which is understood to represent its Object in its character as Sign” (2.252). In other words the Argument represents its Object as a Sign – as something that stands for something for someone. Given the fact that the same Sign could stand for many different things for different people and even different things for the same person at a different time, the Argument will also have to show why the Sign stands for this thing at this time for this person, when it could be otherwise. Here we can see the difference between Peirce’s notion of “law” and the typical positivistic/Newtonian conception of law³. For Peirce a class-10 sign is an example of “law”:

As *general*, the law, or general fact, concerns the potential world of quality, while as *fact*, it concerns the actual world of actuality. Just as action requires a peculiar kind of subject matter, which is foreign to mere quality, so law requires a peculiar kind of subject, the thought, or, . . . , the *mind*, as a peculiar

³ It is for this reason that I have used the phrase “[habit]-law” to distinguish Peirce’s conception from the typical conception.

kind of subject foreign to mere individual action. Law, then, is something as remote from both quality and action as these are remote from one another. (1.420)

A habit-law is a “general fact” that is a sign of meaning as reason and it is the fact of its generality that sets it apart from quality and fact. The fact that “law” as it is used here could mean something different for someone else or even for the same person under different circumstances evidences that “law” as Argument means something radically different for Peirce than the typical definition of this term. A description of any phenomenon in the universe in terms of a class-10 sign means that the investigator has to offer a testable hypothesis about the “argument” that the phenomenon is making.

The foregoing discussion was a brief introduction to the conceptual tools that Peirce offers to study the possible and actual phenomena in a continuously evolving universe. Whereas his semiotics furnishes us with this conceptual apparatus, it does not offer us the method to be used when employing these tools during the course of inquiry – it only points towards it. For his method of inquiry, or for Peirce’s version of the scientific method, we have to look at Peirce triadic logic.

Peirce on the Logic of Scientific Inquiry

For Peirce scientific inquiry is a three step process: 1) a conjectural hypothesis about a novel phenomenon in the universe that upsets or challenges established habits of thought, 2) a description of the conditions that would have to be met to make the novel phenomenon explicable, and 3) an exploration to see if the conditions identified in (2) are encountered in empirical reality. In more technical terms, Peirce’s logic of scientific inquiry shows it to be composed of abduction, deduction, and induction. He describes the different elements in these words:

Observe that neither Deduction nor Induction contributes the smallest positive item to the final conclusion of the inquiry. They render the indefinite definite; Deduction Explicates; Induction evaluates: that is all ... Yet every plank of its advance is first laid by [Abduction] alone, that is to say, by the spontaneous conjectures of instinctive reason; and neither Deduction nor Induction contributes a single new concept to the structure. (6.475)

In very strong terms Peirce identifies abduction as both the origin of all new knowledge claims and the source of “the final conclusion of the inquiry.” In other words, while deduction and induction play an indispensable role during the course of the inquiry, they neither initiate scientific inquiry nor bring it to a conclusion. For Peirce abduction is the alpha and omega of scientific inquiry. At this point we will look at the salient features of abduction, deduction, and induction in more detail.

In the broadest terms abduction refers to the ability of “guessing right.” When we seek to identify the source of this ability, we are led to human instincts. Peirce notes that human beings display the characteristic of guessing right when faced with a novel, surprising phenomenon:

Nature is a far vaster and less clearly arranged repertory of facts than a census report; and if men had not come to it with special aptitudes for guessing right, it may well be doubted whether in the ten or twenty thousand years that they may have existed their greatest mind would have attained the amount of knowledge which is actually possessed by the lowest idiot. (2.753)

For Peirce the amount of knowledge attained by human beings about the natural world in the last ten to twenty thousand years is the most compelling evidence for the fact that

they have a special aptitude for guessing right. If human beings did not have this ability it is highly unlikely that the brightest among them could know more than the dumbest among them has actually known. The reasoning behind the position is the following: When faced with a novel phenomenon, there is slightly less than an infinite number of possible explanations. If a human being had to go through each of these possibilities one by one, either inductively or deductively, in order to eliminate the false explanations to arrive at the correct answer it would take an almost infinite amount of time. The fact that the better minds among us arrive at the correct hypothesis from among the almost infinite theoretical possibilities, within a few guesses, suggests that we do have a “special aptitude for guessing right.” Peirce goes on to note that it is “not man merely, but all animals” who display this characteristic of guessing right (2.753). Among other things, Peirce calls this characteristic a “divinatory power” (6.477) and a “natural instinct for guessing right” (7.220). For Peirce it makes no sense to posit that this characteristic is at work in the animal kingdom but plays no role in the human attempt to understand (and master) the natural environment. Ordinary common sense attributes the ability of chickens (and other species in the animal kingdom) to “guess right” to their instincts. In light of this commonsensical explanation, Peirce asks: “But if you are going to think every poor chicken is endowed with an innate tendency toward a positive truth, why should you think that to man alone this gift is denied?” (5.591).

Peirce argues that this gift has played a key role in the emergence and evolution of science. When we look at the history of science we find that all important scientific discoveries through the ages have been the result of instinctive conjectures. Peirce notes that “the well-prepared mind has wonderfully soon guessed each secret of nature is historical truth. All the theories of science have been so obtained” (6.476). In very strong terms he notes that “the existence of a natural instinct for truth is, after all, the sheet-anchor of science” (7.220). While instinctive, abductive guesses may be the “sheet-anchor of science” they only account for the first step in the process of scientific investigation.

Peirce notes that “a hypothesis adopted by abduction could only be adopted on probation and must be tested” (5.202). But before the hypothesis is tested, the hypothesis has to be clearly and coherently articulated in such a way that it makes certain predictions whose validity can be put to the test. This marks the second stage of scientific inquiry:

This testing, to be logically valid, must honestly start, not as [Abduction] starts, with scrutiny of the phenomena, but with examination of the hypothesis and a muster of all sorts of conditional experiential consequences which would follow from its truth. This constitutes the Second Stage of Inquiry. For its characteristic form of reasoning our language has, for two centuries, been happily provided with the name Deduction. (6.470)

Deduction prepares the way for the testing of the hypothesis in two different but related ways. The first step in deduction is “by logical analysis to Explicate the hypothesis, i.e., to render it as perfectly distinct as possible” (6.471). In this step some of the implicit assumptions in the hypothesis are made explicit. The second step is to state the hypothesis in the form of a theorem with predictive power. In this second step the goal is to “trace out [the hypothesis] necessary and probable experiential consequences” (7.203). While instincts and intuition are the distinguishing features of abduction, abstraction and generalization are the distinguishing features of deduction. Peirce notes:

Reasoning is of three types, Deduction, Induction, and Abduction. In deduction, or necessary reasoning, we set out from a hypothetical state of things which we define in certain abstracted respects. Among the

characters to which we pay no attention in this mode of argument is whether or not the hypothesis of our premises conforms more or less to the state of things in the outer world. We consider this hypothetical state of things and are led to conclude that, however it may be with the universe in other respects, wherever and whenever the hypothesis may be realized, something else not explicitly supposed in that hypothesis will be true invariably. (5.161)

As noted above deduction cannot be considered the testing stage of the hypothesis, it is the preparatory stage for the testing. This is due to the fact that “[d]eduction, . . . relates exclusively to an ideal state of things” (7.205) – “ideal” here meaning hypothetical, theoretical. But the ideal description produced by deduction is an essential step in determining the validity of the hypothesis in the real world. This is because the second stage of inquiry provides us with certain expectations that should be observed in the world if the abductive hypothesis is correct. Taking his description of the process of scientific inquiry further, Peirce describes the third stage of scientific inquiry in these words:

The purpose of Deduction, that of collecting consequents of the hypothesis, having been sufficiently carried out, the inquiry enters upon its Third Stage, that of ascertaining how far those consequents accord with Experience and of judging accordingly whether the hypothesis is sensibly correct, or requires some inessential modification, or must be entirely rejected. Its characteristic way of reasoning is Induction. (6.472)

While deduction reaches its conclusion with reference to an ideal state, induction undertakes experimental tests to see if the conclusion obtain in empirical reality. Described a little bit differently, induction is an inference which tests predictions that are to be expected from the deductive conclusions that have been abstracted from an abductive hypothesis. For Peirce this type of inference “is alone properly entitled to be called *induction*” (7.206). The entire inductive stage is characterized by comparison. It draws samples from the actual world, compares them with the expected/theoretical results (derived from the deductive stage) and checks to see if there is a correlation between the two. While induction helps us to reach probable conclusions about actual experience, Peirce emphasizes that inductive conclusions lead to only a very particular type of “positive knowledge.” Peirce notes that induction offers “mere processes for testing hypotheses already in hand. The Induction adds nothing [to the hypothesis]. At the most it corrects the value of a ratio or slightly modifies the hypothesis in a way which had already been contemplated as possible” (7.217). In sum, Peirce’s logic of the scientific method can be summarized as follows. Scientific inquiry begins with an abductive guess about a surprising event in the world. This intuitive, abductive guess is then articulated in abstract, deductive terms. It is then tested inductively to see if expected results from the deduction actually obtain in empirical reality.

This section began with the goal of identifying the conceptual tools and logical methods that are adequate for studying the universe as conceived by scientific philosophy, i.e., pragmatism. We saw that Peirce’s semiotics provides the tools to conceptually master the continuity and novelty that is continuously encountered in an evolving universe. Then we saw that Peirce’s logic offers a method of inquiry to study the process of evolution scientifically. The defining characteristic of this method is that it provides a way for knowledge to continuously grow to keep up with the emergence of novel phenomena in an evolving universe. Having looked at the broad outlines of pragmatism, pragmatic semiotics, and pragmatic logic we can see that in a certain context there is significant affinity between pragmatism and analytic philosophy. Now the discussion will turn to the possible contribution that pragmatic analytic philosophy can make to enriching resources for theology.

Section Four: Pragmatic Analytic Philosophy as a Resource for Theology

THE LAST COMPLETE PAPER THAT PEIRCE WROTE before he died in 1914 is a good place to begin our discussion of the contributions that pragmatic analytic philosophy can make to theology. The title of the paper is “A Neglected Argument for the Reality of God” and it was written in 1906 (with an addendum in 1908). He calls this argument “neglected” because theologians have paid scant attention to it – choosing to focus on the well-known and well-worn cosmological, teleological, and ontological arguments. The reason that the theologians pay scant attention to this “neglected” argument is because they “probably share those current notions of logic which recognize no other Arguments than Argumentations” (6.457). For Peirce the difference between an “Argument” and “Argumentation” is subtle but profound. An Argument is “any process of thought reasonably tending to produce definite belief” (6.456). While an “Argumentation” is “an Argument proceeding upon definitely formulated premises” (6.456). Peirce’s logic does not conflate “Argument” and “Argumentation.” This distinction allows us to see that the cosmological, teleological, and ontological “arguments” for the existence of God are actually “argumentations.” In making a distinction between a “process” and the “definitely formulated premises” of the process, Peirce’s “Neglected Argument” teaches us that the “process” by which one attains belief in God is no different from the process by which one arrives at scientific truth.

After presenting the evidence to support his hypothesis that God is Real, Peirce begins the concluding part of the paper by noting: “[T]he hypothesis of God’s Reality is logically not so isolated a conclusion as it may seem. On the contrary, it is connected so with a theory of the nature of thinking that if this be proved so is that” (6.491). The scientific method is that “theory of the nature of thinking” which is so intimately connected to “the hypothesis of God’s Reality,” that the proof of one serves as evidence for the proof of the other. Commenting on “A Neglected Argument for the Reality of God,” Michael Raposa notes that “despite the metaphysical and cosmological themes that pervade it, [it] turns essentially on certain claims made about the logic of inquiry” (Raposa, 32). Peirce’s argument for the reality of God is such that the answer to the question “whether all physical science is merely the figment – the arbitrary figment – of the students of nature” (6.503) is directly dependent on the answer to the question whether God is Real or not. Put in simple terms, if God is Real then scientific inquiry yields true knowledge, if God is not Real then scientific knowledge yields illusions.

From the perspective of Peirce’s pragmatism, the method by which one reaches scientific truth cannot be separated from the method by which one comes to believe in God – the

former is merely a more specific case of the latter. Here it must be pointed out that Peirce is using the term “God” a very particular sense. The term “God” has nothing to do with some impersonal, immutable concept variously called the Prime Mover, Monad, Transcendental Ego, Universal Mind and other such abstract terms. For Peirce, God is “the first and last, the {A} and {Ö}” (6.429). In philosophical terms Peirce describes the relationship between the Alpha, the Omega and the universe in these terms: “The starting-point of the universe, God the Creator, is the Absolute First; the terminus of the universe, God completely revealed, is the Absolute Second; every state of the universe at a measurable point of time is the third” (1.362). In simple terms, Peirce uses the term “God” in the sense that this term is understood in the Abrahamic religions. The Abrahamic religions see God as creator of the universe in the distant past, the One who sent revelation in different forms during the course of history (some of which has been put in the form of Scripture – the Hebrew Bible, Gospels, and Qur’an) and the One to whom every human being will return to give account of his or her actions in the world.

There is an intimate relationship between this particular conception of God and the foundational presupposition of scientific philosophy: “To believe in a god at all, is not that to believe that man’s reason is allied to the originating principle of the universe?” (2.24). For Peirce the relationship between reason and God is deeper and more intimate than mere hypothetical affirmation because the purpose of the theoretical sciences is “simply and solely the knowledge of God’s truth” (1.239). From the perspective of his scientific philosophy, it is clear that the truth and glories of God cannot be separated from the universe that God has created – the very same universe that is the object of scientific inquiry. For Peirce, it is not possible to become “acquainted with the glories of God” (1.127) and “God’s truth” without becoming acquainted with the universe because the universe is “a great symbol of God’s purpose, working out its conclusions in living realities” (5.119). Being a “great symbol of God’s purpose” is another way of saying that the “Universe [is] precisely an argument” (5.119) for the reality of God. Peirce goes on to describe the character of the argument that the universe represents in more detail: “The Universe as an argument is a poem and a symphony – just as every true poem is a sound argument” (5.119). Peirce’s semiotics offers us the conceptual tools to decipher the signs and symbols that the poem is composed of. His logic offers us the method of inquiry to follow the argument and test its validity.

The same semiotics and logic that is used to study the universe that God has created is to be used to study the religion that He has revealed. After noting that poetry is “one sort of generalization of sentiment,” Peirce notes that the “complete generalization of sentiment is religion, which is poetry, but completed poetry” (1.676). In describing the universe that science studies as “a great poem” which is making a “sound argument” and religion as “completed poetry,” Peirce points to the continuity between religion and science – and his semiotics provide the tools for conceptualizing that continuity and his logic the method for investigating it. From the perspective of Peirce’s pragmatism the validity of scientific truths depends on the reality of this God and the reality of this God depends on the validity of the results attained through scientific inquiry. The following paragraphs will summarize the Neglected Argument.

Peirce’s “Neglected Argument” is “a nest of three arguments for the Reality of God” (6.486). Peirce calls the first of the three-fold nested arguments the Humble Argument. The argument begins with the activity of “Pure Play”: “Now, Play, we all know, is a lively exercise of one’s powers. Pure Play has no rules, except this very law of liberty. It bloweth where it listeth. It has no purpose, unless recreation” (6.458). Pure Play is primarily

concerned with “some wonder in one of the universes, or some connection between two of the three, with speculation concerning its cause” (6.458). Here the term “universes” refers to the universe of possibilities, facts, and habit-law. Peirce recommends that special attention be focused on the “cause” of the connection between any two of the three universes (6.458). This Musement should be allowed to unfold for 40–50 minutes without any interruption and eventually it will yield its fruits: “[I]n the Pure Play of Musement the idea of God’s Reality will sooner or later be found an attractive fancy, which the Muser will develop in various ways” (6.465). In other words: “The Humble Argument initiates pragmatic argumentation with an abduction: the phenomenon of growth that characterizes all universes of experience is a sign of God’s creativity” (Ochs, 237). Continued reflection on the idea of God’s Reality will make the idea not only increasingly attractive but also increasingly relevant: “The more he ponders it, the more it will find response in every part of his mind, for its beauty, for its supplying an ideal of life and for its thoroughly satisfactory explanation of his whole threefold environment” (4.465).

After the hypothesis of God has emerged in the mind, the attention of the Muser is fixed on the hypothesis. Among other things, the Muser becomes curious about its origin – perhaps more curious about this than any other aspect of the hypothesis. At this stage the Humble Argument gives way to the Neglected Argument. The Neglected Argument locates the origin of the hypothesis in the Muser’s intuitive instincts and shows that: “[F]ar from being a vicious or superstitious ingredient, it is simply the natural precipitate of meditation upon the origin of the Three Universes” (6.487). Peirce notes that to deny the reality of instincts or its results, is to deny that human beings belong to the world of nature. There is practically no doubt regarding the reality of instincts working in the animal kingdom. For Peirce, instinct is also at work in the human world, more specifically in the world of human thought. In (6.476) Peirce draws an analogy to illustrate how ridiculous it is to claim that human instinct does not exist or that it is not reliable. To the degree that a human being is a part of the natural world, instinct is as much a part of the human being as it is of any bird or animal – and almost as reliable. During the course of scientific inquiry it is very often the case that the inquirer is faced with a choice of two or more hypotheses that can be used to explain the same set of facts. Preferring one hypothesis over the other(s) is quite often a case of instinctual preference:

Yes; it must be confessed that *if we knew* that the impulse to prefer one hypothesis to another really were analogous to the instincts of birds and wasps, it would be foolish not to give it play, within the bounds of reason; especially since we must entertain some hypothesis, or else forego all further knowledge than that which we have already gained by that very means” (6.476).

In other words, the intuitive belief in God that emerges in the aftermath of meditation on natural phenomena originates in the same instinctive impulse that helps us to select one among a number of likely hypotheses during the course of scientific inquiry.

After naming and describing the Humble and Neglected parts of the Neglected Argument, Peirce does not give a name to the third part of the argument. But he does give a clear description:

The third argument, enclosing and defending the other two, consists in the development of those principles of logic according to which the humble argument is the first stage of a scientific inquiry into the origin of the three Universes, but of an inquiry which produces, not merely scientific belief, which is always provisional, but also a living, practical belief, logically justified in crossing the Rubicon with all the freightage of eternity. (6.485)

Whatever the name of the third part of the NA, its function is two fold – to serve as a conclusion to the NA and show that the first part of the NA (the Humble Argument) produces not just “scientific belief” but also a living, practical belief that is logically justified. Hence, it is obvious that Peirce sees significant similarities between the logic of scientific discovery and the last part of the NA. But instead of going on to describe the third part of the NA in detail, he gives a detailed account of the logic of scientific inquiry. We will come back to the possible motives behind Peirce’s tangent, after describing the Neglected Argument in more detail.

The Muser began by contemplating some phenomenon in the universe(s) and the hypothesis of God’s Reality emerged. Reflecting on the origin of the hypothesis, the Muser discovers that the origin of the hypothesis is his intuitive instinct. At this stage the contemplation will leave the universe(s) and the origins of the hypothesis behind, and focus on the reality that the hypothesis suggests – the reality of God. Continued contemplation will widen and deepen the Muser’s proximity to God. As the intensity of the proximity increases, the character of the Muser begins to be affected by this relationship. Peirce uses an analogy to explain this point: “Just as long acquaintance with a man may deeply influence one’s whole manner of character” (6.502) so will an individual’s acquaintance with God become the determining factor in shaping his own character. As a matter of fact, this is the closest that we can come to having a precise description of God – a relationship that improves the character of the individual. Speaking of what the term “God” means for a pragmatist, Peirce notes: “[S]o if contemplation and study of the psychophysical universe can imbue a man with principles of conduct analogous to the influence of a great man’s works or conversation, then that analogue of a mind – for it is impossible to say that *any* human attribute is *literally* applicable – is what he means by ‘God’” (6.502). The degree to which the claimant modifies his habits to bring them in line with the knowledge claim, to that degree the knowledge claim is valid. While it was cited in the previous section, it is worth re-citing Peirce’s description of pragmatism in light of what he has said about the reality of God in (6.502): “[T]he true meaning of any product of the intellect lies in whatever unitary determination it would impart to practical conduct under any and every conceivable circumstance, supposing such conduct to be guided by reflexion carried to an ultimate limit” (6.490). The coherence, consistency, and continuity of Peirce’s pragmatism is such that it is a philosophical method of inquiry that it is applicable to anything that a human being can form a concept of, including God.

In light of what Peirce has said in other places but using the terms introduced in the previous section we can call the third part of the NA the Pragmatist Argument. Taken together, the Humble, Neglected, and Pragmatist Arguments make up the NA. Peter Ochs describes the third part of the NA as “a methodic of pragmatism” (Ochs, 235). Peirce acknowledges that “the presentation of this argument would require . . . a strict proof of the correctness of the maxim of Pragmatism” (6.485). Leaving the proof for later, Peirce begins a new subsection of the essay titled “The Three Stages of Inquiry” right after finishing the NA.

The Argument for God and the Logic of Scientific Inquiry

After informing the reader that the remainder of the essay is composed of three subsections, the introductory paragraph of this subsection describes the relationship between the subject matter of the first subsection and the subject matter of the previous section (the NA) in these words:

The first shall give the headings of the different steps of every well-conducted and complete inquiry, without noticing possible divergencies from the norm. I shall have to mention some steps which have nothing to do with the Neglected Argument in order to show that they add no jot nor tittle to the truth which is invariably brought just as the Neglected Argument brings it. (6.468)

In this subsection, Peirce constructs an ideal-type of the different steps that collectively make up the method in “every well-conducted and complete inquiry.” He will go on to discuss the method of scientific inquiry in detail and show that the method is composed of abduction, deduction, and induction. But before beginning this discussion he informs the reader that his discussion of the method of scientific inquiry will contain details that were not present during his discussion of the NA. But practically speaking these details add “no jot nor tittle to the truth which is invariably brought just as the Neglected Argument brings it.”

Peirce is aware of the fact that his conception of the NA is open to critique. By looking at the way Peirce addresses possible criticisms of the NA, we can better understand his claim that the logic of scientific inquiry is but a special case of the more general Neglected Argument for the reality of God. He acknowledges that there are various philosophies of science and various theologies that can critique the pragmatist conception of the reality of God. But he rejects these critiques on purely logical grounds. To begin with, this conception can be critiqued on the basis of philosophical skepticism. Peirce argues that if we accept the presuppositions of skepticism we will have to reject validity of science as well: “[I]f we cannot in some measure understand God’s mind, *all* science . . . must be a snare” (8.168). While the beginning of the following passage explicitly refers to skepticism in general, the end of the passage leaves no doubt as to the specific type of skepticism that is being critiqued:

[S]kepticism, in the sense of doubt of the validity of elementary ideas – which is really a proposal to turn an idea out of court and permit no inquiry into its applicability – is doubly condemned by the fundamental principle of scientific method – condemned first as obstructing inquiry and condemned second because it is treating some other than a statistical ratio as a thing to be argued about. No: as to God, open your eyes – and your heart, which is also a perceptive organ – and you see him. (6.493)

For Peirce philosophical skepticism with respect to the reality of God is a position that “the scientific method utterly condemns” (6.493).

Apophatic theology is different from philosophical skepticism in that it affirms the reality of God but then becomes skeptical regarding any positive knowledge claims about God. From this perspective the only reasonable things we can say about God are in purely negative terms – what God is not. Any positive statements about the attributes of God are considered unreasonable by definition. Peirce summarizes the apophatic position in these words:

[V]arious great theologians explain that one cannot attribute *reason* to God, nor perception (which always involves an element of surprise and of learning what one did not know) and, in short, that his “mind” is necessarily so unlike ours, that some – though wrongly – high in the church say that it is only negatively, as being entirely different from everything else, that we can attach any meaning to the Name. (6.502)

While skeptical philosophy has to be rejected for violating the foundational principle of the scientific method, negative theology has to be rejected in the face of the actual results of scientific inquiry. Peirce argues that we have to reject the claim of apophatic theology that “we cannot attach any meaning to the Name” because “the discoveries of science,

they're enabling us to *predict* what will be the course of nature, is proof conclusive that, though we cannot think any thought of God's, we can catch a fragment of His Thought, as it were" (6.502). In other words, while the logic of scientific inquiry lays bare the logical flaws in the philosophical skepticism that rejects all claims of "faith" or "belief" in God, the results produced by the scientific method have shown the logical flaw in the skeptical attitude of apophatic theology towards the capacity of human reason to come to know God.

In section two of this monograph two passages describing the pragmatic maxim were cited – (5.402) and (5.465). Here these two passages are cited again but in the context of explicating Peirce's claim that the logic of scientific inquiry and the argument for the reality of God are intimately related. The first passage that was cited was: "Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object" (5.402). Peirce inserts the following comment in the note on (5.402): "It has been said to be a sceptical and materialistic principle. But it is only an application of the sole principle of logic which was recommended by Jesus; 'Ye may know them by their fruits,' and it is very intimately allied with the ideas of the gospel" (Volume 5, Endnote 258). The last two lines of the second passage (5.465) were purposely not cited earlier. Here is the completed passage:

All pragmatists will further agree that their method of ascertaining the meanings of words and concepts is no other than that experimental method by which all the successful sciences . . . have reached the degrees of certainty that are severally proper to them today; this experimental method being itself nothing but a particular application of an older logical rule, "By their fruits ye shall know them. (5.465)

Here Peirce is alluding to the Gospels, more specifically to Mathew 7:15–20. Here is the entire passage:

Beware of false prophets, who come to you in sheep's clothing but inwardly are ravenous wolves. You will know them by their fruits. Are grapes gathered from thorns or figs from thistles? In the same way, every good tree bears good fruit, but the bad tree bears bad fruit. A good tree cannot bear bad fruit, nor can a bad tree bear good fruit. Every tree that does not bear good fruit is cut down and thrown into the fire. Thus you will know them by their fruits. (Mathew 7:15–20)

Peirce argues that Prophet Jesus suggested only one logical rule – but stated it in poetic form. Looked at in formal terms, the logical rule suggested by Prophet Jesus is none other than the logic of scientific inquiry. If this claim on Peirce's part is indeed true, then Peirce's pragmatic semiotics and logic would be nothing less than a vast, untapped resource for theology.

Iqbal's Reconstruction of the Argument for the Reality of God⁴

In Section Two we detailed Iqbal's insight that the way the term "*āya*" is employed in the Qur'an points to a deep and intimate relationship between the "phenomenology of manifestation" and the "hermeneutics of proclamation." Iqbal contrasts the Qur'anic attitude towards nature, history, and the human self with the classical Greek attitude to show just how far removed the Qur'an is from the classical Greek tradition. The manner in which

⁴ This part of the discussion is a slightly edited version a section from "The Contemporary Relevance of Muhammad Iqbal" in *Muhammad Iqbal: Essays on the Reconstruction of Modern Muslim Thought*. Eds. H.C. Hillier and Basit Bilal Koshul. Edinburgh, Scotland: Edinburgh University Press. Pp. 56–87.

it uses the term “*āya*” accords nature, history, and the human self the same metaphysical status as the word of God itself. While Iqbal relied largely on the Islamic intellectual tradition in his explication of the term “*āya*,” the findings of modern science take center stage when he turns his attention to reconstructing the scholastic arguments for the existence of God. Commenting on the place of these arguments in intellectual history, Iqbal notes:

Scholastic philosophy has put forward three arguments for the existence of God. These arguments, known as the Cosmological, the Teleological, and the Ontological, embody a real movement of thought in its quest after the Absolute. But regarded as logical proofs, I am afraid; they are open to serious criticism and further betray a rather superficial interpretation of experience. (Iqbal, 23)

Iqbal subjects the three arguments to both logical and empirical critique and then goes on to offer his own alternative. In terms of approach, this is very similar to Peirce. Ochs notes that Peirce’s Humble Argument is a critique and correction of the cosmological argument and his Neglected Argument is a critique and correction of the ontological argument (Ochs, 234). We can take Ochs’ insight further by hypothesizing that Peirce’s Pragmaticist Argument is a critique and correction of the teleological argument. While Iqbal’s approach is very similar to Peirce, his point of emphasis is notably different. Peirce’s NA shows that the argument for the reality of God is but a general case of the method of scientific inquiry. Iqbal’s alternative argument will show that for the Qur’an the scientific description of the universe is as significant a resource for rationally conceptualizing God as the wisdom of the revelation.

For Iqbal the three scholastic arguments are demonstrably deficient, firstly, because each one of them is fraught with internal contradictions. These arguments divide reality into the irreconcilable opposites of cause/effect (cosmological), designer/designed (teleological) and ideal/real (ontological). Each of the three arguments is based on binary logic and this logic for its part creates an unbridgeable divide between thought and being. Secondly and perhaps more importantly, these arguments also “betray a rather superficial interpretation of experience” (Iqbal, 23). Iqbal supports this latter contention by citing the findings of post-Newtonian physics, post-Darwinian biology, and post-Freudian psychology.

A brief tangent might be helpful at this stage. It must be kept that the text that eventually came to be published as *The Reconstruction of Religious Thought in Islam* was composed of six lectures that Iqbal delivered in 1928 and one lecture that he delivered in 1932. By training he was a lawyer without any advanced formal education in the physical and natural sciences. At best, his knowledge of science was not any more than that of an educated layperson. Nonetheless, a careful reading of his work shows that Iqbal’s knowledge about science was deep enough to enable him to distinguish; a) Einstein’s interpretation of relativity from Whitehead’s interpretation, b) Darwinian evolution from emergent evolution and c) Freudian and Jungian psychology from configuration psychology. In each case, he preferred the latter to the former. The basic reason for Iqbal’s preference is that the latter challenge the materialistic, mechanistic and reductionist tendencies which characterize the former. At the same time, Iqbal sees the cosmological, teleological and ontological arguments for the existence of God as the products and continuing legacy of the pre-scientific age of philosophy. Iqbal argues that instead of basing our rational conception of God on philosophical categories, concepts and ideas derived largely from the pre-scientific era of history we should begin with our experience in/of the universe, learn all that science has to teach us about this experience and then interpret it “following the

clue furnished by the Qur'an which regards experience within and without as symbolic of a reality described by it, as 'the First and the Last, the visible and the invisible' [57:3]" (Iqbal, 25).

Here Iqbal is offering an interesting proposal – in trying to rationally understand God, we rethink the age-old categories of cause/effect, designer/designed, and ideal/real. In their stead we approach the Divine by interpreting experience as the symbol (*āya*) of a Reality that is relational in character – “the First and the Last, the visible and the invisible.” At this point Iqbal turns to the scientific exploration of three regions of experience (e.g. matter, life and consciousness). First he gives the reader a general picture of modern physics' conception of matter, biology's conception of life and psychology's conception of consciousness. Then he goes on to describe the implications that the scientific description of matter, life, and consciousness have for our rational conception of God in light of 57:3.

The description of matter provided by physics has undergone substantial modification since the days of Newton. Classical physics presented a picture of Nature as being composed of inert, dead, enduring stuff, called matter, suspended in a uniform, empty void, called space: “[The] scientific view of Nature as pure materiality is associated with the Newtonian view of space as an absolute void in which things are situated” (Iqbal, 28). Iqbal notes that Berkeley and Whitehead had offered a sound philosophical critique of this materialistic theory of matter. The basic critique of this theory is that it creates an unbridgeable gap between the knowing subject (mind) and the known object (matter):

Between Nature and the observer of Nature, the theory creates a gulf which he is compelled to bridge over by resorting to the doubtful hypothesis of an imperceptible something, occupying an absolute space like a thing in a receptacle and causing our sensations by some kind of impact. In the words of Professor Whitehead, the theory reduces one-half of Nature to a 'dream' and the other half to a 'conjecture'. (Iqbal, 27)

As sound as the philosophical critique offered by Berkeley and Whitehead is, the materialist conception of Nature “has received the greatest blow from the hand of Einstein ... whose discoveries have laid the foundations of a far-reaching revolution in the entire domain of human thought” (Iqbal, 27). At this point Iqbal quotes Bertrand Russell as acknowledging that Einstein's theory of relativity has done more to undermine the classical understanding of matter and substance than “all the arguments of the philosophers” (Russell as quoted by Iqbal, 27f.). Iqbal uses the summary offered by Whitehead to describe the revised conception of matter, substance, and space that emerges in the aftermath of Einstein's discoveries:

According to Professor Whitehead ... Nature is not a static fact situated in an a-dynamic void, but a structure of events possessing the character of continuous creative flow which thought cuts up into isolated immobilities out of whose mutual relations arise the concepts of time and space. Thus we see how modern science utters its agreement with Berkeley's criticism which it once regarded as an attack on its very foundation. (Iqbal, 28)

In the words of Russell “[a] piece of matter has become not a persistent thing with varying states, but a system of inter-related events” (quoted in Iqbal, 28). As the understanding of Nature offered by physics has evolved from Newton to Einstein to post-Einstein, it becomes obvious that “the empirical attitude which appeared to necessitate scientific materialism has finally ended in a revolt against matter” (Iqbal, 27).

The cosmological argument conceives of God as the infinite, uncaused first cause and Nature as the finite effect. Looking at Nature as a “system of inter-related events” allows Iqbal to conceive a different relationship between Nature and God. Iqbal notes:

Nature, as we have seen, is not a mass of pure materiality occupying a void. It is a structure of events, a systematic mode of behaviour, and as such organic to the Ultimate Self. Nature is to the Divine Self as character is to the human self. In the picturesque phrase of the Qur’an it is the habit of Allah. (Iqbal, 45)

Here Iqbal has transformed the cause/effect binary in the cosmological argument into a person-universe-habit relationship between God and Nature. In the midst of apparent arbitrariness, randomness and senselessness in our world, attentive observation reveals certain patterns and harmonies. The Qur’an describes these patterns and harmonies as *sunnat Allah*, or “the habits of Allah” (33:62; 35:43; 48:23). The habits of Allah shape that which is the result of the habits, the material universe we see around ourselves. And in the universe we see one of the defining characteristics of the Ultimate Ego being displayed – continuous creation:

From the human point of view it is an interpretation which, in our present situation, we put on the creative activity of the Absolute Ego. At a particular moment in its forward movement it is finite; but since the self to which it is organic is creative, it is liable to increase, and is consequentially boundless in the sense that no limit to its extension is final. Its only limit is internal, i.e. the immanent self which animates and sustains the whole. As the Qur’an says: ‘And verily unto thy Lord is the limit’ (53:42). (Iqbal, 45)

Thus far Iqbal has been offering an interpretation of experience as understood by modern physics. At the end of the last passage he brings this scientific interpretation directly into conversation with the Qur’an and 53:42 can be seen as a particular expression of the general description of the Ultimate Ego in 57:3 as “the First and the Last, the visible and the invisible.” Integrating the Qur’anic perspective that Nature is the “habit of Allah” and the perspective of physics that Nature is a “system of inter-related events” gives rise to a perspective in which space, matter and time can be conceived as being the manifestations of the creative activity of God. Consequently the latter “are not independent realities existing *per se*, but only intellectual modes of apprehending the life of God” (Iqbal, 53).

Just as he uses the findings of physics to critique and correct the cosmological argument, Iqbal uses the findings of modern biology to do the same with the teleological argument. The teleological argument infers the existence of an intelligent designer from the experience of a well-designed universe and it apparently avoids the pitfalls of the cause/effect binary plaguing the cosmological argument. But Iqbal’s analysis shows that the binary has insidiously survived in the teleological argument in the form of the designer/designed dichotomy. In addition to a number of logical fallacies plaguing the teleological argument (Iqbal, 24), Iqbal describes the shortcomings of the argument from the perspective of modern science. A review of the history of biology reveals that from its very inception biology had to discard the materialist notion of Nature as being fixed, static and unchanging – a conception inherited from the intellectual legacy of Newtonian physics. Everywhere that one looks in the organic, natural world one sees growth, variation and adaptation. But Newtonian physics, and one might add Aristotelean metaphysics, have infected modern biology in the form of a “veiled materialism” since at least the days of Darwin. Iqbal notes that the materialism of Newtonian physics becomes mechanism in Darwinian biology:

The discoveries of Newton in the sphere of matter and those of Darwin the sphere of Natural History reveal a mechanism. All problems, it was believed, were really the problems of physics. Energy and

atoms, with the properties self-existing in them, could explain everything including life, thought, will, and feeling. The concept of mechanism – a purely physical concept – claimed to be the all-embracing explanation of Nature. (Iqbal, 33)

From the Newtonian and Darwinian perspectives causality in the world of Nature could be understood in purely mechanistic terms. Iqbal acknowledges the fact that the “concept of ‘cause’ ... the essential feature of which is priority to the effect” is well suited for studying a certain class of phenomena in empirical reality – for example the motion of billiard balls on a pool table. But, he goes on to note: “[W]hen we rise to the level of life and mind the concept of cause fails us” because “the behaviour of [a living] organism is essentially a matter of inheritance and incapable of sufficient explanation in terms of molecular physics” (Iqbal, 34). It is not just the phenomenon of inheritance that cannot be explained mechanistically employing the notion of “cause and effect,” Iqbal notes that the behaviour of the organism itself cannot be explained in these terms either: “The action of living organisms, initiated and planned in view of an end, is totally different to causal action” (Iqbal, 34). A scientific account of such behaviour “demands the concept of ‘end’ and ‘purpose,’ which act from within unlike the concept of cause which is external to the effect and acts from without” (Iqbal, 34). Here Iqbal is stating his case for jettisoning the concept of “cause/effect” and adopting the concept of “end/purpose” when studying the phenomenon of life. Then he goes on to offer the scientific grounds for his position.

After acknowledging that “I am no biologist and must turn to biologists themselves for support” (Iqbal, 34), Iqbal offers the insights of the biologists Haldane, Driesch and Carr in support of his position. Haldane notes that there are certain processes in a living organism that can be explained using the conception of cause/effect as it is understood in physics and chemistry. But there are other processes that require going beyond the mechanistic conception of cause/effect. For Haldane the two processes that cannot be explained in terms of cause/effect are the two characteristics that separate a machine from a living organism; self-repair and self-reproduction. The passage of time and the change of environment present unforeseeable challenges and opportunities for the living organism. And the organisms that survive and flourish are the ones which can respond creatively to the challenges and take advantage of the opportunities. An adequate account of the way that life interacts with its environment can only be had when the notion of “ends/purpose” is employed. Whether it is responding to unexpected challenges or taking advantage of novel opportunities, in either case the behaviour of the organism is determined by its ability to choose a particular end (in the future), in light of a general purpose (usually determined by past experience) in order to shape its present behaviour. Combining Haldane’s observations with Driesch’s description of life as “factual wholeness” Iqbal notes:

Life is, then, a unique phenomenon and the concept of mechanism is inadequate for its analysis ... In all the purposive processes of growth and adaptation to its environment, whether this adaptation is secured by the formation of fresh or the modification of old habits, it possesses a career which is unthinkable in the case of a machine. (Iqbal, 35)

A machine can only repeat previously established patterns of action; it cannot invent or discover new patterns. It is obvious that living organisms have not merely continued to repeat patterns that have proven to be life-sustaining in the past, they have also invented or discovered new patterns during their life-course in order to sustain and further the life of the individual organism and the life of the species. In short while the designer/designed

distinction helps us to understand the relationship between humans and machines, it is completely inadequate in helping us to understand the relationship between God and Nature, given the characteristics of reproduction and repair that are observed in the world of nature.

Iqbal then uses the insights of Wildon Carr to deepen his critique of applying mechanistic conceptions when dealing with the phenomenon of life. For Carr the evolution of life as understood by modern biology clearly and obviously necessitates jettisoning the mechanistic conception of cause/effect. Carr argues that is not logically possible for a mechanistic process to have been the cause of the origin and evolution of biological life – and the scientific mind that studies this process. Combining the insights of Haldane, Driesh and Carr Iqbal comes to the conclusion that the attempt to explain the behaviour of living organisms in mechanistic terms breaks down completely when we consider the ability of living organisms to discover, invent and create:

In fact all creative activity is free activity. Creation is opposed to repetition which is characteristic of mechanical action. That is why it is impossible to explain the creative activity of life in terms of mechanism. (Iqbal, 40)

Given the inadequacy of the concepts of a designer who is the cause and the designed which is the effect to provide a coherent account of observed reality, especially that part of reality that is the subject matter of biology, Iqbal offers the alternative of “ends and purposes.” For Iqbal “ends and purposes ... form the warp and woof of our conscious experience” (Iqbal, 42). He supplements the evidence provided by practicing biologists in this regard with the insights of a philosopher who takes modern biology seriously:

The element of purpose discloses a kind of forward look consciousness. Purposes not only colour our present states of consciousness, but also reveal its future direction. In fact, they constitute the forward push of our life, and thus in a way anticipate and influence the states that are yet to be. To be determined by an end is to be determined by what ought to be. Thus past and future both operate in the present state of consciousness, and the future is not wholly undetermined as Bergson’s analysis of our conscious experience shows. A state of attentive consciousness involves both memory and imagination. (Iqbal, 43)

It is only through this non-mechanistic conception of behaviour that a coherent explanation can be given for the ability of living organisms to pursue an attractive “ought” in the face of an obstructing “is.” For Iqbal, the evolution of life over the eons is the result of the conscious and wilful action of living organisms to continuously struggle to modify the actual “is” and bring it closer to an imagined “ought.” And this action is explicable only by employing the concepts of end and purpose “which act from within” as being the determining factors in shaping the behaviour of the organism. This is due to the fact that the imagined “ought” is the end, purpose towards which the action is aimed.

For Iqbal the “quality of Nature’s passage in time is perhaps the most significant aspect of experience which the Qur’an especially emphasizes ...” (Iqbal, 36). Keenly observing this “passage in time,” i.e., the process of evolution, reveals that the patterns and harmonies in Nature discovered by physics, e.g. the “habits of Allah” are animated by a sense of purpose. In other words biology’s discovery of the central role of ends and purposes in the process of evolution suggests that a close study of the “habits of Allah” shows that the universe is not the result of mere sport. In this regard Iqbal cites a number of different passages. One of them is the following:

Verily in the creation of the Heavens and of the earth, and in the succession of the night and of the day, are signs for men of understanding; who, standing and sitting and reclining, bear God in mind and reflect on the creation of the Heavens and of the earth, and say: "Oh, our Lord! Thou hast not created this in vain" (3:190-1). (Quoted by Iqbal, 8)

Looking at the characteristics of life as described by modern biology and combining it with the wisdom gleaned from the Qur'an allows Iqbal to transform the designer/designed binary at the heart of the teleological argument into a person-universe-purpose relationship.

For Iqbal, the ontological argument for the existence of God is no less logically flawed than the cosmological and teleological arguments. While there is sufficient reason to reject the ontological argument because of its inner incoherence, for Iqbal, we cannot sidestep the ontological problem of "how to define the ultimate nature of existence," since the universe is "external to us, it is possible to be sceptical about its existence" (Iqbal, 37). The external universe displays characteristics that constantly impinge upon our inner life and threaten its stability and coherence. The threat of the external "real" universe to our inner "ideal" world is such that the former confronts the latter in the form of an ultimate threat – the threat of death and annihilation. Under these circumstances, the question naturally arises as to the ultimate nature of reality; is it a stable, fixed "ideal" unaffected by change or is it a constantly changing "real" where all appearance of stability and coherence is an illusion? For Iqbal, the ontological problem is very much an issue of psychology. Hence, Iqbal proposes that we subject consciousness or psychological experience to scientific and philosophical scrutiny in order to deepen our understanding of the ultimate nature of existence.

But when we look at the way consciousness has been studied by the dominant schools in psychology we find two major shortcomings. Firstly, these schools have been quite superficial in terms of their subject of inquiry. Iqbal argues that "modern psychology has not yet touched upon even the outer fringe of religious life, and is still far from the richness and variety of what is called religious experience" (Iqbal, 152). To illustrate this point, he offers the following disclaimer before quoting a passage from a 16th century Muslim mystic: "I am afraid it is not possible for me to expound the real meaning of this passage in the language of modern psychology; for such language does not yet exist" (Iqbal, 152). The second shortcoming is the fact that the conceptual tools that are employed by the dominant schools are invariably reductionist and *ipso facto* rule out certain possibilities:

Assuming that sex-imagery has played a role in the history or religious, or that religion has furnished imaginative means of escape from, or adjustment to, an unpleasant reality – these ways of looking at the matter cannot, in the least, affect the ultimate aim of religious life, that is to say, the reconstruction of the finite ego by bringing him into contact with an eternal life-process, and thus giving him a metaphysical status of which we can have only a partial understanding in the half-choking atmosphere of our present environment. (Iqbal, 153f.)

The materialistic conceptions in physics led to mechanistic conceptions in biology which in turn produced reductionist conceptions in psychology – a reductionism which makes the human self to be nothing more than an epiphenomenon emanating from the mechanistic functioning of a materialist universe. Complementing his use of a particular school of thought in physics that offers an alternative to materialism and one in biology that offers an alternative to mechanism, Iqbal identifies a particular school of thought in psychology that offers an alternative to reductionism – configuration psychology. Based on

findings of configuration psychology and the insights of Bergson, Iqbal offers an account of the human self that goes beyond the ideal/real dichotomy that is inherent in the ontological argument.

Iqbal's philosophical analysis of consciousness and time leads him to identify two types of consciousness, i.e., the efficient self and the appreciative self, and two types of time, i.e., serial time and pure duration. He turns to the Qur'an and notes that "in its characteristic simplicity" the Qur'an "alludes to the serial and non-serial aspects of duration" (Iqbal, 39). Here he cites a passage (25:58–9) which states that Allah created the heavens, the earth and what is between them "in six days." Then he cites another passage (54:49–50) which states that when Allah created all things his "command was but one, swift as the twinkling of an eye." After citing these two passages in juxtaposition, Iqbal goes on to comment:

If we look at the movement embodied in creation from the outside, that is to say, if we apprehend it intellectually, it is a process lasting through thousands of years; for one Divine day, in the terminology of the Qur'an, as of the Old Testament, is equal to one thousand years. From another point of view, the process of creation, lasting through thousands of years, is a single indivisible act, "swift as the twinkling of an eye." (Iqbal, 39).

Iqbal recognizes the fact that it is exceedingly difficult to understand and appreciate pure duration using language that has been shaped, primarily, to help us deal with serial time. He tries to overcome the difficulty by offering an illustration:

According to physical science, the cause of your sensation of red is the rapidity of wave motion the frequency of which is 400 billion per second. If you could observe this tremendous frequency from the outside, and count it at the rate of 2,000 per second, which is supposed to be the limit of the perceptibility of light, it will take you more than six thousand years to finish the enumeration. Yet in the single momentary mental act of perception you hold together a frequency of wave motion which is practically incalculable. That is how the mental act transforms succession into duration (Iqbal, 39).

This illustration demonstrates that there is a part of the self that can transform "practically incalculable" motion, change and flux into stability, coherence and permanence in "the twinkling of an eye." It is in this sense that the appreciative self is that part of consciousness where "the self in its inner life moves from the centre outwards."

Iqbal has used the philosophical analysis of time to provide a more comprehensive description of consciousness and the psychological analysis of consciousness to provide a more comprehensive description of time. He brings the two more rounded descriptions into relationship with each other in these words:

The appreciative self, then, is more or less corrective of the efficient self, inasmuch as it synthesizes all the 'heres' and 'nows' – the small changes of space and time, indispensable to the efficient self – into the coherent wholeness of personality. (Iqbal, 39)

Combining this understanding of consciousness shaped by the Qur'an and psychology with his reconstructed conceptions of matter and life, puts Iqbal in the position to offer a reconstructed conception of ontology. He notes:

We are now, I hope, in a position to see the meaning of the verse – 'And it is He Who hath ordained the night and the day to succeed one another for those who desire to think on God or desire to be thankful' [25:62]. A critical interpretation of the sequence of time as revealed in our selves has led us to a notion of the Ultimate Reality as pure duration in which thought, life and purpose interpenetrate to form an organic unity. We cannot conceive this unity except as the unity of a self – an all-embracing concrete self – the ultimate source of all individual life and thought. (Iqbal, 44)

For Iqbal the ontological problem is resolved by going beyond the ideal/real binary and discovering a “self” that the Qur’an and a scientific examination of consciousness point towards. For Iqbal the self is both prior to time and space and capable of doing what neither time nor space can do:

Neither pure space nor pure time can hold together the multiplicity of objects and events. It is the appreciative act of an enduring self only which can seize the multiplicity of duration – broken into an infinity of instants – and transform it to the organic wholeness of a synthesis. To exist in pure duration is to be a self, and to be a self is to be able to say ‘I am’. Only that truly exists which can say “I am”. (Iqbal, 44f.)

Since the self has an efficient and an appreciative side, for Iqbal the self that has the ability to say “I am” combines within itself the characteristics of movement and stability, flux and coherence, change and permanence.

In the foregoing discussion Iqbal has been critiquing the dominant positions in the ontological debate. One side in the debate associates existence and reality with the “real” and the characteristics of change, flux and impermanence. The other side in the debate associates existence and reality with the “ideal” and the characteristics of immutability, immobility and permanence. As he has been critiquing these positions, gradually, Iqbal has been putting into place the different building blocks of his alternative position. We can say that up till now he has been engaged in an “efficient” analysis of the ontological problem. But we have reached a point in the discussion where we can offer an “appreciative” statement on Iqbal’s understanding of the “ultimate nature of reality.” At the point, it is worth repeating a passage that was cited earlier which summarizes Iqbal’s “ontological” position:

I have conceived the Ultimate Reality as an Ego and I must add now that from the Ultimate Ego only egos proceed. The creative energy of the Ultimate Ego, in whom deed and thought are identical, functions as ego-unities. The world, in all its details, from the mechanical movement of what we call the atom of matter to the free movement of thought in the human ego, is the self-revelation of the “Great I am”. Every atom of Divine energy, however low in the scale of existence, is an ego. But there are degrees in the expression of egohood. Throughout the entire gamut of being runs the gradually rising note of egohood until it reaches its relative perfection in man. That is why the Qur’an declares the Ultimate Ego to be nearer to man than his own neck-vein. (Iqbal, 57)

Iqbal’s resolution of the ontological problem comes in the form of transforming the ideal/real binary into a person-universe-consciousness relationship. For Iqbal every atom, molecule, cell, organism, plant, tree, insect, bird, animal, mountain, continent, planet, galaxy, person, tribe, society, culture, religion, etc. as well as the universe itself and God Himself is a *khudi* or self. This means that everything in the universe is a conscious “self” or a “person” capable of saying “I am” – and every ego capable of saying “I am” is for its parts “the self-revelation of the ‘Great I am.’” The following observation by Muhammad Rafiuddin is an apt summary of the place of the concept of *khudi* in Iqbal’s thought:

All that Iqbal has presented as a thinker has its roots in one concept alone to which he has given the name of *Khudi* or ‘Self’. All the philosophical ideas of Iqbal are derived from, and rationally and scientifically related to, this one concept, the concept of ‘Self’. (Rafiuddin, 1961a, 86)

Rafiuddin also notes that “Iqbal’s concept of reality is the God of Islam for which he uses the philosophical term ‘Ultimate Ego’” (Rafiuddin, 1992 [1971], 59). Robert Whittemore argues that Iqbal’s philosophical conception of *khudi* is as corrective of the modern, materialistic conception of the universe as of the traditional conception of God:

[Iqbal's] notion of God as Absolute Ego, whatever its offense to the religious sensibilities of the mullah, the rabbi, and the priest, gives concrete meaning and plausibility to man's cherished belief that God is Love. His conception of purpose as the realization by Self of value and character, however dubious it may appear to the materialist, does explain the relatedness of all things to God and of God to all things in such a manner as to avoid the paradoxes inherent in the scholastic conception of God as simple, immutable perfection. (Whittemore, 1975, 128f.)

Iqbal's critique and correction of the cosmological, teleological and ontological arguments for the existence of God can be summarized as follows:

- Changing the cause/effect binary into person-universe-habit relationship.
- Changing the designer/designed binary into person-universe-purpose relationship.
- Changing the ideal/real binary into person-universe-consciousness relationship.

It has been almost a century since Iqbal produced his work. There have been significant developments in the natural sciences (to say nothing of the human sciences and philosophy). All of these developments strengthen Iqbal's central argument that the evolution of science will cause it to move away from the materialistic, mechanistic and reductionist conception of matter, life, and self that it had championed at an earlier stage in its development. While a more detailed discussion of this point requires separate treatment, it is worth identifying some of these developments at this point. Iqbal argued that "Whitehead's view of Relativity is likely to appeal to Muslim students more than that of Einstein in whose theory time loses its character of passage and mysteriously translates itself into utter space" (Iqbal, 106). Lee Smolin's work on the reality of time thesis develops Whitehead's insights further. Ilya Prigogne's work in chemistry and Lynne Margulis' work in epigenetics lend experimental support to the central claims of emergent evolution and practically demolishes the blind, mechanistic conception of life that is at the core of Darwinian evolution. The work of Viktor Frankl in psychology signals the maturation of the field and provides a scientific framework which has the capacity to move beyond a reductionist treatment of consciousness and shows the human being to be an active participant in the creation of meaning and significance in the universe. Parallel to these developments in the sciences, other thinkers have identified Peircean and Peirce-like semiotics as the conceptual tools that are best suited for conducting scientific inquiry in the post-Newtonian, post-Einstein era. A partial list of such thinkers would include the work of Thomas Sebeok on "zoosemiotics," Martin Krampken on "phytosemiotics," Gunther Witzany on treating biological development and chemical interactions as semiotic processes, Howard Smith on "psychosemiotics" and Alberto Rosa and Jaan Valsiner using semiotics in cultural psychology. In other words, developments over the past century both in the sciences and in the area of methodology of scientific inquiry have generated a vast pool of resources that support and facilitate a move away from binary logic and towards a relational logic. The latter helps us to conceive of possibilities about ourselves, the universe and God that the former rules out.

We began this section by looking at Peirce's alternative to the classical arguments for the existence of God, i.e., the Neglected Argument. As we were looking at this argument in some detail we saw that the argument was intimately linked to a particular conception of the process of scientific inquiry. Then we moved on to looking at Iqbal's alternative to the classical arguments for the existence of God. In looking at Iqbal's position we saw that his interpretation of the findings of post-Newtonian science in light of the teachings

of the Qur'an require that we have to reshape our conception of God. In other words, first we saw that the logic underpinning the Peirce's Neglected Argument for the Reality of God is the same as the logic that underpins the scientific method. Then we saw that according to Iqbal the Qur'anic description of matter, life and consciousness is practically the same as the descriptions offered by post-Newtonian physics, post-Darwinian biology and post-Freudian psychology. The common feature of the alternatives offered by Iqbal and Peirce is that at the methodological and practical levels, their insights reveal "hitherto unsuspected mutual harmonies" between religion and science.

A more detailed analysis of Iqbal's thought offered by two thinkers in the middle of the 20th century – Robert Whittemore and Muhammad Rafiuddin – will help us appreciate the relevance of Iqbal's thought at the beginning of the 21st century. Working independently, Whittemore and Rafiuddin reached virtually the same conclusions about the contents and relevance of Iqbal's work, at virtually the same time – in the mid fifties. In the words of Whittemore, Iqbal's philosophy is "an achievement possessing a philosophical importance far transcending the world of Islam" (Whittemore, 1956, 682). The reason why Iqbal's work holds significance beyond the world of Islam is two-fold. First, Iqbal is deeply engaged with certain issues that are also the focus of leading thinkers outside the Muslim world. Second, Iqbal offers some unique insights on these issues which are potentially groundbreaking. Whittemore describes the key problem faced by 20th century philosophy in these words:

The universe is One and a Many, a plurality of interacting subject selves and their unity, and how it can be both at once is, as James Ward has remarked, *the* philosophical problem of the twentieth century. (Whittemore, 1975, 113)

He goes on to note that the cosmologies offered by F.H. Bradley, A. N. Whitehead, Sri Aurobindo, Nikolas Berdyaev, William James, Charles Hartshorne, Josiah Royce and R. Radhakrishnan seek to resolve this very problem. For Rafiuddin the challenge of the One and Many is far older than the 20th century – it has been a central concern of human inquiry since the dawn of history. Rafiuddin notes:

Ever since the human being started to reflect on the world around him, his thought has been always accompanied by an intuitive sense. This intuitive sense suggests that even though there is almost an infinity of diversity and plurality around him, this variety is actually the manifestation of some One and all the plurality will eventually return to this single source. But what is the actual reality of this One? This problem has always been the central concern of human reflection.⁵ (Rafiuddin, 1961a, 60)

In working through the problem of the relationship between the One and the Many, Iqbal is aware of the variety of answers proposed in West as well as the Muslim world. In formulating his own response he takes advantage of resources in both philosophical traditions. Comparing Iqbal's response with that of aforementioned modern philosophers, Whittemore notes:

In one way, the task that Iqbal sets himself is even more difficult than that confronting these others, for he seeks not only a reconciliation of the Many and the One, not simply to account for the interaction of the finite selves with the Ultimate Self, but to do so in such a manner as to render his conception consonant with the teaching of the Qur'an. (Whittemore, 1975, 113)

⁵ The original is in Urdu, the translation into English is mine.

Rafiuddin concurs with Whittemore's observation about the centrality of the Qur'an in Iqbal's thought and the fact that the use of revealed scripture in his philosophy sets him apart from other philosophers:

Very much like the systems of other philosophers, Iqbal's philosophy is an example of systematized wisdom. But there is a difference between Iqbal and the other philosophers. This difference is that for Iqbal the teaching of the Qur'an that it is the Reality of God which underpins the unity of the universe or that Reality which transforms the Multiplicity of the universe into Oneness. (Rafiuddin, 1992 [1971], 9)

The fact that the Qur'an is the central pillar around which Iqbal's philosophy is built is further evidenced by the fact that the Qur'an is the most oft cited text in *The Reconstruction of Religious Thought in Islam*. Whittemore affirms Rafiuddin's observation that Iqbal's philosophy is rooted in a very particular religious tradition:

[Iqbal's] work is, from first to last, the work of a *muslim*. At every point he is at pains to indicate his conviction that his teaching is in all respects harmonious with the spirit and teaching of the Quran. He speaks and writes always from a standpoint *within* Islam. (Whittemore, 1975, 125)

Iqbal is a Muslim thinker standing firmly within the Islamic tradition and from this particular vantage point offers the concept of *Khudi* to bring the One into relationship with the Many.⁶

At the same time that they agree that Iqbal's philosophical insights are firmly rooted within the Islamic tradition, Rafiuddin and Whittemore also agree that the relevance of Iqbal's philosophy far exceeds the world of Islam. Iqbal's work can be seen to have extra-Islamic relevance because it addresses some of the key issues that Islam shares with other monotheistic faiths:

That God (whatever its nature) is One, that this universe is animated (for better or worse) by purpose, and that it has a positive character and value, that this value is evidenced by the testimony of God to man in Scripture – in these convictions Islam and the religions of the west find common ground. (Whittemore, 1956, 698)

But the “extra-Islamic significance” of Iqbal's thought is not the result of merely addressing a set of concerns that are common to Islam and other religions:

To ascribe, however, an extra-Islamic significance to Iqbal's thought is to claim that his viewpoint contributes in important measure to the clarification and understanding of these common convictions, not only as regards their internal coherence but as regards their harmonization with secular knowledge as well. (Whittemore, 1956, 698)

In other words, Iqbal's achievement helps different religious traditions to better understand and address a set of common theological issues. But even more so, Iqbal is able to bring the “common convictions” shared by the Abrahamic religions into conversation (and perhaps harmony) with non-religious knowledge.

Thus far we have described the significance of Iqbal's philosophy of self from the perspective of theology and religious thought. But “to say that Iqbal has given new plausible meaning to old paradoxical doctrine is but to state half the case” (Whittemore, 1956, 698). The relevance of Iqbal's thought to the understanding of secular knowledge

⁶ In contrast, other philosophers have variously offered the Unmoved Mover, the Idea, the Monad, the Transcendental Ego, the Universal Spirit (and other such abstract concoctions) to bring the One into relation with the Many.

is the other half. Whittemore argues that Iqbal's philosophy is directly relevant to secular knowledge as well because it offers a way to integrate religion, science and philosophy:

[I]n showing that nature and spirit are not alien to one another, and hence that it is not necessary for the man of religion to say no to his environment, he has pointed the way to a solution of the perennial conflict between science, philosophy, and religion ... (Whittemore, 1956, 698)

Whittemore describes the continuing relevance of Iqbal's achievement in these words:

The continuing value of Iqbal's *Reconstruction*, and the measure of its author's philosophical standing, is his having shown that the proper understanding of the meaning and relation of religion, science, and philosophy will be attained only when men come to realize that each is only a perspective, but a perspective for the lack of which Reality would be the less. (Whittemore, 1975, 130)

On one level the present section has done nothing more than affirm the judgement of Whittemore and Rafiuddin about the "continuing value of Iqbal's *Reconstruction*" in the 21st century. When viewed in relationship to the previous three sections, the present section brings greater depth to the judgement. The semiotics and logic that are implicit in Iqbal's work are able to build bridges between religion, science, and philosophy that are not possible otherwise. The following observation by Ochs helps us to appreciate the place and significance of this achievement:

In the last few centuries ... Scriptural theologians have not been very successful at drawing philosophers, scientists, and artisans into conversation with them. While some theologians may suggest it is all the fault of secular philosophies and others may suggest it is all their own fault for not mastering the latest trends, I am siding with those who believe that the arts and sciences have very much to do with what theology is about and vice versa, and that the task of each generation is to make their mutual needs apparent. (Ochs, 324)

When studied in conjunction with Peirce's pragmatism, semiotics, and logic (or pragmatic analytic philosophy) not only are we better able to appreciate the mutual needs of philosophy and theology, we are also able to discern the mutual enrichments that are possible. This evolutionary development of modern philosophical and theological inquiry in turn holds the promise of opening up new intellectual, theological and cultural horizons.

Afterword: Iqbal, Peirce, and Modernity

by PETER OCHS

AN EXPLORATION OF THE CONTRIBUTIONS that pragmatic analytic philosophy may make to theology in the 21st century offers me an opportunity to reflect on the evolution of my own theological education. My first Muslim dialogue partner, Basit Koshul, introduced me to *The Reconstruction of Religious Thought in Islam*⁷ in 1997. Studying Iqbal together we began a practice that led to our interest in scriptural reasoning: our way of studying Abrahamic scriptures together as a means of repairing what we considered the ills of modern academic thought. While he was introducing me to the reparative theology of Iqbal, I was introducing him to the reparative logics of Charles Sanders Peirce, the American pragmatist whose work in the philosophy of science preceded Iqbal by half a century (he was born 1839 and died 1914). This present undertaking offers us an opportunity to reflect on how much these two masters share in the way they diagnose and seek to repair the ills of modernity. There are good reasons to draw the works of Iqbal and Peirce into dialogue. Peirce was the greatest philosopher and logician of science of his day, innovator of such intellectual practices as pragmatism, semiotics, and the logic of relations while also surprisingly attentive to matters of scriptural faith. As Basit was the first to show Peirce's logic of science adds technical precision to Iqbal's philosophy of religion and science, while Iqbal's philosophical theology adds accounts of scriptural and liturgical theology that are undeveloped in Peirce's work.⁸ This dialogue, moreover, is not just a matter of intellectual history, since the writings of both Iqbal and Peirce remain profound resources for contemporary philosophies of science and religion.⁹

To introduce this dialogue, I will re-read Iqbal's *Reconstruction* through the lens of Peirce's pragmatism. In the interest of space, my reading will seek answers to the single most important question a pragmatist may ask today: how shall Scriptural religion respond to the challenges of modernity? When read by way of Peirce's pragmatism, I believe *Reconstruction* responds with the following eight lessons:

⁷ Muhammad Iqbal, *The Reconstruction of Religious Thought in Islam*. Stanford, CA: Stanford Univ. Press.

⁸ Koshul comments, "My academic interests are focused on interrelating the social science of Max Weber with the theocentric semiotics of Charles Sanders Peirce and then relating this synthesis to the philosophy of religion articulated by Muhammad Iqbal." See Basit Koshul, cited in *Scriptures in Dialogue, A record of the seminar 'Building Bridges' held at Doha, Qatar, 7–9 April 2003*, ed. Michael Ipgrave (London: Church House Pub, 2004), 26. Also chapter 7 of *Max Weber and Charles Peirce: At the Crossroads of Science, Philosophy, and Culture*. Lanham, MD: Lexington Books.

⁹ The most cited collection of Peirce's writings is Charles Sanders Peirce, *Collected Papers*, eds. Charles Hartshorne and Paul Weiss (Cambridge: Belknap Press of Harvard University, 1934). For one of several sources on Peirce's philosophy of religion, see Peter Ochs, *Peirce, Pragmatism, and the Logic of Scripture* (Cambridge, UK: Cambridge University Press, 1998).

First Lesson: Scriptural religion is not shocked by radical, historical change but offers itself as teacher and guide to communities and societies facing upheaval.

Iqbal writes:

Reality lives in its own appearances; and such a being as man, who has to maintain his life in an obstructing environment, cannot afford to ignore the visible. The Qur'an opens our eyes to the great fact of change, through the appreciation and control of which alone it is possible to build a durable civilization. (Iqbal, 12)

Now, Charles Peirce was first a chemist and mathematician and only later a philosopher of science with a Christian voice. He is perhaps best known for his pragmatism, a method for re-connecting the abstractions of modern western thought to the lived realities they are meant to serve. Peirce's pragmatism offered a means of repairing scientific and humanistic inquiries that, having forgotten their origins and purposes in everyday life, had become self-referential and self-serving. Peirce's pragmatism was taught more widely by his disciple and benefactor William James¹⁰. His work introduced Iqbal himself to the psychology and epistemology of American pragmatism. Iqbal's distinction between mysticism and prophecy helps clarify the meaning of pragmatism. He writes,

Muhammad of Arabia ascended the highest Heaven and returned. I swear by God that if I had reached that point, I should never have returned." (1) These ... words of [the] great Muslim saint, 'Abd al-Qud-dus of Gangoh ... disclose ... an acute perception of the psychological difference between the prophetic and the mystic types of consciousness. The mystic does not wish to return from the reposes of "unitary experience." ... [But] the prophet returns to insert himself into the sweep of time ... [His] desire is to see his religious experience transformed into a living world-force. (Iqbal, 99)

In these terms we may say that pragmatism was Peirce and James' way of asking their Harvard colleagues to act less like mystics and more like prophets. For Peirce, this pragmatism was a moral imperative rather than a merely alternative school of thought because, after the Fall, intelligence is brought to life for the sake of repairing the wounds of life in this world. I believe Iqbal's pragmatic imperative was to repair Muslim society from the ill effects of modernity – without damaging its good effects. This is the work of *Reconstruction*:

Humanity needs three things today – a spiritual interpretation of the universe, spiritual emancipation of the individual, and basic principles of a universal import directing the evolution of human society on a spiritual basis. Modern Europe has, no doubt, built idealistic systems on these lines, but experience shows that truth revealed through pure reason is incapable of bringing that fire of living conviction which personal revelation alone can bring.... Believe me, Europe today is the greatest hindrance in the way of man's ethical advancement. The Muslim, on the other hand, is in possession of these ultimate ideas of the basis of a revelation, which, speaking from the inmost depths of life, internalizes its own apparent externality.... Let the Muslim of today appreciate his position, reconstruct his social life in the light of ultimate principles, and evolve, out of the hitherto partially revealed purpose of Islam, that spiritual democracy which is the ultimate aim of Islam. (Iqbal, 142)

Second lesson: a symptom and mark of change is pain. Scriptural religion offers itself as teacher and guide to communities overcome by pain.

In *Reconstruction*, Iqbal offers an epistemological and scriptural account of pain that begins in the Qur'anic narrative of the creation of man. For Iqbal, the narrative attends

¹⁰ See William James, *Varieties of Religious Experience* (Scotts Valley, CA: IAP, 2009) and William James, *Pragmatism and Other Writings*, ed. Giles Gunn (New York: Penguin Classics, 2000).

to humanity's two elemental desires: the desire for knowledge, and the desire for self-multiplication and power (Iqbal, 68). Both desires are seated in the form of creation itself: for the Creator is that Supreme Ego who creates all things from the smallest atom to man in the image of "ego", that is, as centres of energy and activities. They are simply varied in their degree of complexity, relationship and self-consciousness. All things therefore desire to know, or assimilate their worlds to themselves, and all things desire to repeat themselves. Thus far, the Qur'anic account could serve as Peirce's ontology, since for Peirce all things, from the smallest atom, have life and seek to know and seek to grow. But what of pain?

For Iqbal, the narrative of the Fall is not about any "moral depravity: "it is man's transition from simple consciousness to the first flash of self-consciousness ... Man's first act of disobedience was also his first act of free choice; and that is why, according to the Qur'anic narration, Adam's first transgression was forgiven [2:35-37 and 20:120-122]" (Iqbal, 68 and note no. 60 p 170). The story of the tree is a story of man's temptation to ignore the fact that his freedom is bounded by finitude.

The only way to correct this tendency was to place him in an environment which, however painful, was suited to the unfolding of his intellectual faculties. Thus Adam's insertion into a painful physical environment was not meant as a punishment; it was meant rather to defeat the object of Satan who, as enemy of man, diplomatically tried to keep him ignorant of the joy of perpetual growth and expansion. But the life of a finite ego in an obstructing environment depends on the perpetual expansion of knowledge based on actual experience. And the experience of a finite ego to whom several possibilities are open expands only by [the] method of trial and error. Therefore, error which may be described as a kind of intellectual evil is an indispensable factor in the building up of experience. (Iqbal, 69)

Iqbal's account of the tree could well serve as Peirce's anthropology. For Peirce, too, the human being lives in this world as an environment whose obstructions stimulate discovery and change and learning. Each obstruction causes the pain of doubt; doubt leads one to discover his errors, to imagine ways of correcting them, and to test these imaginings through trial and error. This process repeated again and again is the life of the scientific intellect whose distillate Peirce calls "the protean *vir*," the really human. This *vir* or active-human grows through self-control, mediated by trial and error, and its ultimate distillate is completed science or knowledge of the real, the one real that is this created world. The Qur'anic narrative of the tree thereby provides Scripture for Peirce's account of science and of the pain of doubt that gives rise to it.

But Iqbal recognizes a second narrative, as well, in which human desire for self-multiplication and power threatens its capacity to know the world through trial and error. Satan tempts the humans to eat from the tree of Eternity and with the promise of "the Kingdom that fails not." But each self is finite so that the humans' goals of indefinite self-replication must eventually lead to the conflict of each against the other: this "brings in its wake the awful struggle of ages. 'Descend ye as enemies of one another' says the Qur'an (2:36). This mutual conflict of opposing individualities is the world-pain which both illuminates and darkens the temporal career of life ... The acceptance of selfhood as a form of life involves the acceptance of all the imperfections that flow from the finitude of selfhood" (Iqbal, 70).

Such an account! This second narrative of pain not only complements but also lends greater clarity to Peirce's account of the category of Pain or Struggle in all human

experience.¹¹ For Peirce, the pains of both doubt and suffering belong to this category, but Iqbal offers Peirce a better means of distinguishing between them. For the twentieth century mystic Simone Weil, this is the distinction between pain and affliction. Weil notes that affliction is a condition of the spirit when, seeing no end of pain, it loses hold of good reasons for living.¹² In these terms, Iqbal's account of the "awful struggle of ages" may be an account of affliction. Beyond the frustrations that are prompted by "an obstructive environment" and that stimulate scientific inquiry, this is the pain that follows war and gives rise to despair. May we say that the difference between these two pains marks the difference between the way modernity contributes to our civilization – refining how we may reason scientifically in response to obstructions – and the way it burdens our civilization (forgetting the reparative purpose of science and thereby leaving so many obstructions in place)? May we say that, for both Iqbal and Peirce, modernity offers instruction in the pain of individualized consciousness, which brings free choice and critical reason? But that modernity also brings the risk of self-serving consciousness, which divides the world into the destructive dichotomies of mere self and mere other and which breeds affliction, beyond pain? If so, then the second lesson also introduces one of modernity's defining inner challenges: the challenge of human freedom, not just in modernity but also in the creation of humanity. One of Iqbal's profound contributions is to criticise and repair modernity but only as one must criticise and repair every epoch of human life. Modernity is therefore a problem only because we are modern, just as tradition is a problem when we are traditional and theology when we are theologians. From this perspective, Iqbal provides Qur'anic instruction in how to mend a divided world without dividing ourselves from the present world. This is to accept the pain of learning while disciplining oneself from becoming an agent of affliction. Reframed in these scripturally elevated terms, Peirce's pragmatic lesson is that to repair affliction without re-imposing it is to repair afflicted creatures (institutions, bodies, or civilizations) through rules of repair that are immanent in them – even if also hidden from view. But how?

Third lesson: when suddenly confronted by something as different and threatening and potentially undermining as the afflictions of modern civilization, before anything else: Pray.

Just after his discussion of Adam's fall, Iqbal adds this: In contemplating the end of humanity's struggle of the ages, of self against self:

[W]e are passing the boundaries of pure thought. This is the point where faith in the eventual triumph of goodness emerges as a religious doctrine. 'God is equal to His purpose, but most men know it not' (12:21) ... Religion is not satisfied with mere conception; it seeks a more intimate knowledge of and association with the object of its pursuit. The agency through which this association is achieved is the act of worship or prayer ending in spiritual illumination. The act of worship, however, affects different varieties of consciousness differently (Iqbal, 70f.).

Iqbal does not compose these sentences in a pragmatic voice, as if the prayer emerged as the cry of a science that recognized it had surpassed its limits and found itself in

¹¹ In his phenomenology – or foundation for logic – Peirce identified three categories of all human experience. He called these "Firstness" (the category of pure possibility or quality or spontaneity), "Secondness" (the category of pain, which he identified with radical separation or dividedness), and "Thirdness" (the category of relation and mediation, which includes all relations of meaning and signification). See, for example, Charles Peirce, "The Universal Categories," in *Collected Papers* Vol. I Par. 41ff.

¹² Simone Weil, *Waiting for God* (Harper Perennial Classics, 2009).

shipwreck: not just unknowing, but urgently needing to know and not knowing how. But, through Iqbal's account, prayer may indeed set the conditions for pragmatic repair. Beginning with the modern voice of William James's *Varieties of Religious Experience*, Iqbal's observes that

Prayer is instinctive in its origin . . . the act of praying as aiming at knowledge resembles reflection . . . in thought the mind observes and follows the working of Reality; [while] in the act of prayer it gives up its career as a seeker of slow-footed universality and rises higher than thought to capture Reality itself with a view to become a conscious participator in its life. (Iqbal, 71f.). A paragraph later he concludes: "The truth is that all search for knowledge is essentially a form of prayer. The scientific observer of Nature is a kind of mystic seeker in the act of prayer." (Iqbal, 73).

I read Iqbal's response to modernity as first a liturgical one, before anything else. This means that Iqbal's subject is affliction, not mere pain: not localized injustices or even oppressions, but systemic disorders that undermine a civilization's very capacity to know the world, to sponsor a science. To say "pray first" is to say that affliction is the kind of pain that undermines one's trust in all established and conventional practices for encountering the unknown. To pray first is to scrutinize each of these practices, from the everyday habits of the body to the most exacting practices of medicine and morals, to be sure that the problem cannot be resolved within one of those agencies. It is to recognize that, if no means of repair is to be found, this is a sign that one's civilization may be facing a defining moment: this will be either a time for fruitless repetition of failed orthodoxies and conventions or a time for radical renewal. If this is indeed such a time, to pray first is to summon the power of all that remains of current practices – as if to spread one's arms open heavenward as one would open one's arms in prayer – as if the current civilization's practices were a chorus of angels all at once emitting one vast collective cry to God:¹³ "God, you are great! Creator, remember us Your creatures, remember who we were on the day You made us, see how far we have fallen since and how empty we are now of the Wisdom out of which You first fashioned us! Hear our prayer! Oh, deliver us Your Wisdom once again so that in Your Wisdom we might find renewed life and renewed ways of knowing You here on this earth."

In Iqbal's more humble voice, to pray first is to recognize that every science is finite, is born out of obstruction to repair that obstruction, but dies away when faced with a wholly new obstruction. One could call it a time for paradigm shifts, but only if these include paradigms that inform our consciousnesses and not just the current disciplines or fashions of our various academic guilds. I trust it is no coincidence that Iqbal introduces his account of prayer in *Reconstruction* immediately after his account of the Fall. As I read him, the first narrative of the Fall introduces science, in the broadest sense, as the human work of learning to know the world and in so knowing to repair the pain and struggle that gives rise to science itself . . . But the second narrative introduces the human-to-human violence that obstructs the pursuit of science and threatens, at times, to destroy all that science has built. This degree of violence cannot be repaired by the science of a given civilization because it is the very fruit of the freedom that also generated this science. The repair can emerge only out of a practice that uncovers the regenerative font of human freedom that informs all science. Peirce called this pragmatism – and I believe in

¹³ The notion of cry is suggested by David Ford. See David Ford, "Wisdom Cries," in *Christian Wisdom: Desiring God and Learning in Love* (Cambridge: Cambridge University press, 2007), 14–51.

this way he adds something to Iqbal's account. Iqbal calls it prayer and thereby adds a great deal to Peirce's account.

For the pragmatist, the intellect that oversteps its bounds is repaired, adequately, only by being called back to its origins. Within its origins is the hand of its creator, who alone knows the creature well enough to hold a balm for whatever it suffers. Now, neither Iqbal nor Peirce speak directly about the identity of this creator, since the creator's identity can be articulated only in relation to the one who asks for it and, at this initial stage of the *Reconstruction*, the one who asks is not quite ready to think outside the bounds of science, let alone to hear about God. Peirce is the more reticent of the two, since his intended readers are literally laboratory scientists and logicians, while Iqbal's audience may be touched by modernity, but they also know poetry and Qur'an. Much of Peirce's writings therefore remain within the frame of Iqbal's Chapter One, moving at times as far as the issues of Chapter Three. But Iqbal offers the scientist a quicker conversion.

Fourth lesson: To pray is already to exceed the limits of modern propositional science.

Iqbal presents the lessons of *Reconstruction* in developmental stages, so that the discourse offered in the early chapters presupposes a form of cognition and reception that will not be presupposed in the latter chapters. If I am reading him correctly, each stage of the book repairs and elevates the one before it, which also means that each stage has its own dignity and divine purpose as well as its own limits. May I conclude that each stage is thus a stage of prayer, beginning with the prayer that emerges out of the crises of modern science, turning next to the prayers of those who would repair this science? And so on? If so, Chapter One introduces what we might label "propositional reasoning," or the science of modern civilization that has done its good work but now also faces its limits. To have limits is appropriate in this world of the initial Fall. But to ignore those limits is not appropriate. Chapter One identifies the limits of propositional science, warns gently of the dangers of overstepping them and concludes by introducing the remedy for overstepping: prayer itself encountered first in the simple acknowledgement that one's practice of science has reached an impasse and the unknown, for now, remains unknown.¹⁴

The truth is that all search for knowledge is essentially a form of prayer. The scientific observer of Nature is a kind of mystic seeker in the act of prayer. Although at present he follows only the footprints of the musk-deer, and thus modestly limits the method of his quest, his thirst for knowledge is eventually sure to lead him to the point where the scent of the musk-gland is a better guide than the footprints of the deer. This alone will add to his power over Nature and give him that vision of the total-infinite which philosophy seeks but cannot find. (Iqbal, 73)

Fifth lesson: To pray in response to the limits of modern philosophy is to test the capacities of modern reasoning to address the unknown.

Chapter Two presents itself as a "philosophical test of the revelations of religious experience," from the scholastic arguments for the existence of God to Bergson's account of

¹⁴ In this way, Chapter One of the *Reconstruction* corresponds to Part I of Franz Rosenzweig, *The Star of Redemption*, trans. Barbara Galli (Madison: University of Wisconsin Press, 2005), where the reader is addressed as if she or he could be burdened by a reductively modern consciousness. We may take this to mean someone who thinks, in western secular fashion, only through modern propositional thought. For Iqbal, this is someone for whom the commanding word of the Qur'an would be confrontational, contradictory, paradoxical, or mute. Iqbal does not confront such a reader, however. Even more ironically than Rosenzweig, he reflects back to the reader the limitations, if not contradictions, that are intrinsic to the modern propositional model of reasoning when it is applied beyond its proper domain.

pure temporal duration. Re-read in light of Peirce's pragmatism, however, Chapter Two would seem to bear a somewhat different fruit. On one level it would enable readers to sense an at-homeness in modes of reasoning that exceed the limits of propositional science: we come to recognize that these rationalities apply to the natural world. On another level, it would challenge readers to move from open-ended prayer to dialogue with the Unknown. Within that dialogue, it would encourage them to inquire after characteristics and names by which the Unknown might be recognized and called. One need not look too deeply beneath the plain sense of Iqbal's writing to recover this pragmatic reading. Chapter Two begins, for example, with propositional reasonings about religious experience (the classic arguments) and ends with several early forms of post-propositional reasoning – such as organicist approaches to biology (such as Driesch's) and process theories of space and time (such as Whitehead and Bergson's).¹⁵ While presented as means of testing the reality of religious experience, the effect of Iqbal's reasoning is, in each case, to test the capacity of a given scientific paradigm to frame questions about the Unknown. If I am right about this, then Peirce's logical studies of the 1880's and onwards would have significantly strengthened Iqbal's claim. Peirce would have urged him, for example: a) to be more cautious about framing a model like Bergson's *durée* as potentially adequate to religious experience; b) to be more cautious in fact about framing an experience as "religious," since each of these frames becomes proposition-like, predicating something ("religious") of something ("this experience"); c) instead, to propose and test ways of probing what is unknown. He might then evaluate each probing (like *durée*) as either useful or not useful as a means of advancing one step from some crisis of knowledge to some new way of knowing. As for the probing named "God," that is the subject of another lesson.

Sixth lesson: To pray in response to the limits of science is to interrogate the radically unknown.

This brings us to Chapter Three. Appropriate to a dialogue that is not yet finished, Chapter Three introduces the now scientific reasoner, still uncertain of precisely where he or she is going, to liturgy. The defining relationship in *Reconstruction* is indeed between scientific reasoning and what our Jewish philosopher (and friend) Steven Kepnes calls "liturgical reasoning."¹⁶ Liturgy begins in prayer; prayer, most simply put, begins in petition; and the scientific reasoner engages in petitionary prayer as soon as he or she names something out there "unknown" and asks "how can I know you?" In other words, "What in fact leads me forward from reasoning as I know it to a reasoning I do not yet know?" For the scientist, it is in this prayer environment that the phenomenological face of signs (*āyāt*) is first encountered: that which, on the divine side, is always already known to be divine sign and which, on the side of human experience, remains some series of phenomena that exceed our comprehension but not our capacity to ask questions. This sign is a response to questions that we can formulate but cannot yet answer.

Prayer, then, whether individual or associative, is an expression of man's inner yearning for a response in the awful silence of the universe. It is a unique process of discovery

¹⁵ It could well be argued that these approaches, like Einstein's theories of relativity, belong still to the modern project and within the limits of propositional calculi. Iqbal's intent, however, is to look beyond these limits, as illustrated by his interest in Heisenberg and Planck (Iqbal, 55–56). His turn is therefore to post-Newtonian sciences built on logics of probability.

¹⁶ Steven Kepnes, *Jewish Liturgical Reasoning* (London: Oxford University Press, 2007).

whereby the searching ego affirms itself in the very moment of self-negation, and thus discovers its own worth and justification as a dynamic factor in the life of the universe. (Iqbal, 74)

Liturgical knowing includes interrogative knowing – a category best examined in Robert Gibbs’ book *Why Ethics?*.¹⁷ This means asking questions that could be answered because they are probative, and to ask a question presupposes a degree of knowledge. Along with asking comes faith: to ask is to trust that, though we enter the dark, what we know can lead us forward if we ask the right questions of what we do not know. Knowing therefore includes discrimination, recognizing the difference between what is known and not known. It means calculation and judging probabilities. Finally and most significantly, it means relationship. *We are in relationship with what is not known.* There is therefore no simple binary between knowing and not knowing; and, if the known/unknown is not a binary relation, then no feature of our knowing belongs to a simple binary. That is the signal feature of the sixth lesson. Ignorance is a stage of knowing and therefore of relationship.

That conclusion is central, as well, to Peirce’s logical and philosophical work. For Peirce the pragmatist, the urgent purpose of logic is not to help us map what we already know but to guide our walking forward into the dark: to guide our probative ways of inquiring after what we do not know, even when our ignorance pains us the most and imperils us. By way of illustration, Peirce’s logic of vagueness guides the study of indefinite things; his logic of relatives guides the study of predicates as yet unmarried to specific subjects; and his logic of relations guides the study of bonds, between chemicals or between persons; in the latter case this includes the study of faith and trust as well as bonds to the Unknown.¹⁸

Seventh lesson: The pragmatist’s prayer is personification: an open hand and an outstretched arm, or prayer for the renewal of person-to-person relationship, including the renewal of law (shari’a) and the relation of creature to creature.

In Chapter Four, “The Human Ego – His Freedom and Immortality,” Iqbal writes that, in the face of both traditionalist dogmatism and modern scepticism, there are strong philosophic and Scriptural grounds for recognizing the reality of the ego and for discerning its irreducibly relational character: “Whatever may be our view of the self-feeling, self-identity, soul, will – it can be examined only by the canons of thought which in its nature is relational” (Iqbal, 78). Re-read in light of Peirce’s pragmatism, the chapter yields what I call a prayer of personification, because it narrates the life of the creature, who, as ego or person, remains the agent of scientific judgment. The sixth lesson taught that, even in a time of profound doubt, the perplexed or afflicted reasoner still has a personal relation to the Unknown. Whereas the seventh lesson teaches that the Unknown may itself be personified, since we may, at least probatively, suppose that personal relations are established with other persons. The afflicted reasoner addresses the Unknown as person and speaks to him or her, not necessarily through oral human speech, but through some means or measure of interaction. To have a measure is to be known, so that the Unknown is also known to some degree. For Peirce as well as Iqbal, this knowing-unknowing is, at once, relational, vague (or indefinite), and non-absolute. To know relationally is not to know all-or-nothing, but to know however one may tend to know. This is not, therefore,

¹⁷ Robert Gibbs, *Why ethics? Signs of Responsibility* (Princeton: Princeton University press, 2000), 3–6.

¹⁸ See Peirce, “Issues of Pragmatism,” *Collected Papers Vol. 5.46off*. Cf. Susan Haack, Ch 6 in *Deviant Logic* (Cambridge: Cambridge University press, 1975). Ochs, Ch. 7 in *Peirce, Pragmatism, Logic of Scripture*.

the kind of knowing that can be interrogated through propositional reasoning, since that kind of reasoning requires all-or-nothing judgments (obeying the law of excluded middle as well as the principle of non-contradiction). We may thus recognize why propositional reasoning cannot provide an adequate account of the relationship between known and unknown and cannot therefore guide inquiries into the Unknown. The reasoning that will guide us is relational, personal, interrogative, and probative. But is there reason to call it “prayerful?” Iqbal writes that,

It is open to man, according to the Qur’an, to belong to the meaning of the universe and become immortal . . . Life offers a scope for ego-activity, and death is the first test of the synthetic activity of the ego . . . It is the deed that prepares the ego for dissolution or disciplines him for a future career . . . death, if present action has sufficiently fortified the ego against the shock that physical dissolution brings, is only a kind of passage to what the Qur’an describes as *Barzakh* . . . a state of consciousness characterised by a change in the ego’s attitude toward time and space . . . in which the ego catches a glimpse of fresh aspects of Reality and prepares himself for adjustment to these aspects . . . The resurrection, therefore, is not an external event. It is the consummation of a life-process within the ego. (Iqbal, 94–96).

This remarkable passage leads quite a step beyond prayer, but it should provide a very vivid image of the ultimate fruits of reason’s effort to interrogate the Unknown. This effort belongs to the deed that, in Iqbal’s words, disciplines the ego for a further career – or that, in Peirce’s words, generates the *protean vir* of intellectual self-control.

To trust that, despite present afflictions, the Unknown will eventually speak is to address the Unknown through a petition: “Please Unknown, come now, and bring me forward to you.” That request is as much scientific inquiry as it is prayerful reasoning. It is a petition displayed as much in the experimental laboratory as in the mosque. Science and prayer are close because they both presuppose interpersonal relationship, petition, and knowing – moreover, a knowing that goes through our relationship to the natural world. So, what does liturgy add to science when science is characterized as petitionary? Perhaps it is that, unlike science, which treats the unknown like a person but does not usually call him a person, liturgy introduces the unknown *as* a person per se. The person speaks and speaks, in fact, in the name of the Prophet. And the person of the Prophet introduces the seeker to the person of Allah.

Eighth lesson: To pray in response to the limits of human-to-human and creature-to-creature relationships is to pray for the divine presence, alone.

Entering this lesson, the reasoner has now most of the elements of knowing gathered about her. The reasoner now has the name of the Unknown itself, God, and by way of Scripture is beckoned to entertain at least three more dimensions of her epistemic relationship to God:

1. *Scripture speaks in the name of this God, so that the reasoner is no longer one who speaks words into the Unknown but now one who hears words spoken by the Unknown. The voice of the Qur’an confirms the reasoner’s trust: yes, the Unknown will speak, and its speech is commanding.*

This is the moment of transformation. Previously, we reasoners ask and the Unknown answers. Now, however, we speak by way of scripture, which declares itself to be the voice of the Unknown, so that we are brought to observe what it is like to be on the other side. In a sense we hear what we imagine the Unknown hears from us: speech. But

is this speech asking us something, rather than answering us? In fact, no: there is a great transformation taking place here, for now the speech of the Unknown – revealed as the speech of God – asks in a different way. It asks *of* us, in the sense of demanding and interrogating: who are you, what are you doing, what is your ignorance? What are you lacking? These too are questions.

2. *While the reasoner asked, “Who are you?” the Unknown answers with a demand: Act this way, and then you will know.*

Once again, the speaker asks, but now the speaker introduces himself as author of the very world of which we found ourselves ignorant. And the speaker commands. For Iqbal, the *shari’a* is a condition for scientific inquiry. The scientist, in other words, does not inquire into a passive universe, demanding that it reveal its secrets to humanity. Instead, by way of the universe, the creator inquires into humanity, setting the bounds of human action and thereby setting the conditions for scientific inquiry.

In the history of religious experience in Islam which, according to the Prophet, consists in the ‘creation of Divine attributes in man’ ... In the higher Sufism of Islam unitive experience is not the finite ego effacing its own identity by some sort of absorption into the Infinite Ego; it is rather the Infinite passing into the loving embrace of the finite. (Iqbal, 87f.)

3. *The Qur’an addresses its commands to the Ummah as the precondition and context for what it may demand of reasoners individually.*

The spirit of all true prayer is social. Even the hermit abandons the society of men in the hope of finding, in a solitary abode, the fellowship of God. A congregation is an association of men who, animated by the same aspiration, concentrate themselves on a single object and open up their inner selves to the working of a single impulse. (Iqbal, 73)

Scripture speaks its commands to humanity by way of language and society. In Chapter Five, Iqbal writes,

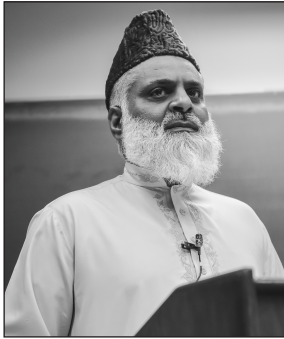
The mystic does not wish to return from the repose of “unitary experience.”... [But] the prophet returns to insert himself into the sweep of time ... [His] desire is to see his religious experience transformed into a living world-force. (Iqbal, 99)

Peirce traced his pragmatism from the Scripture’s prophetic tradition: a call to the modern academy and seminary to return to the sweep of time and to realities of worldly need and suffering. For Iqbal, this call affirms the perspicacity of modern science while recognizing how this science may be opened to prayer and scripture.

We have come full circle. Scripture opens its commanding voice to science when the obstruction that prompts inquiry is not pain alone, but affliction, as the mark of civilizational upheaval. When civilization is out of order, so too are the disciplines of science, and scientific inquiry is completed only through prayer. Science completed in prayer is science that exceeds the limits of modern propositional thinking and its binary logics. This is science for which the Unknown is a source of instruction and not just an obstacle: a science of probabilities, of vagueness, and of relation; a science through which creator and creature enter into dialogue for the sake of repairing the world, binding together Unknown and knower, creator and worshipper.

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**SEMIOTICS AS A RESOURCE FOR THEOLOGIANS:
PHILOSOPHICAL WARRANTS AND ILLUSTRATIONS**

BY BASIT BILAL KOSHUL

In *Semiotics as a Resource for Theology* the author, Basit Bilal Koshul, argues that semiotics contains untapped "analytic" resources that can enrich theology. He makes his case by offering philosophical warrants and illustrations that can be gleaned from a comparative study of the projects for reconstruction proposed by John Dewey and Muhammad Iqbal (independently of each other) in the early part of the 20th century. When Dewey's *Reconstruction in Philosophy* and Iqbal's *Reconstruction of Religious Thought in Islam* are studied together we find the two thinkers largely in agreement on three key points: a) the beginning point of reconstruction, b) the most daunting obstacles to reconstruction and c) the contribution that modern science can make to reconstruction. For both Dewey and Iqbal the beginning point of reconstructing philosophy and religious thought (theology) is to confer (respectively) epistemological and metaphysical dignity on the material world, temporal flux and the human element. The biggest hurdle in taking this first step towards reconstruction is the classical Greek philosophical tradition. Because of the pre-scientific era in which this tradition emerged and evolved, it embodies a dismissive attitude towards matter, time and human subjectivity in both epistemological and metaphysical terms—an attitude that continues to profoundly influence modern philosophical and religious thought. Developments in modern science give us the ability to put forward a probabilistic and testable hypothesis that challenges the classical philosophical conceptions—thereby making it possible to begin the task of philosophical envisioned by Dewey and theological reconstruction envisioned by Iqbal.

The triadic semiotics offered by Charles Sanders Peirce helps us to better understand the need for reconstruction advocated by Dewey and Iqbal, while giving us the conceptual tools to needed to carry out this task. Peirce's semiotics provides the logical framework of an integrated philosophy of science and philosophy of religion. The former allows for the logical analysis of post-Newtonian natural science. This analysis shows that in the universe described by post-Newtonian science, philosophy must confer epistemological value on the material world, temporal flux and the human element. The latter makes a major contribution to the rediscovery of reason and logic in the scriptures and traditions of Islam, Judaism, and Christianity in the aftermath of historical-critical studies and the hermeneutics of suspicion. In short, Peirce's semiotics can be viewed as a type of "analytic" philosophy that is as open to post-Newtonian developments in modern science as it is to post-foundationalist and post-critical developments in scriptural and religious studies. This monograph will offer illustrative examples of how Peirce's semiotics can contribute to building "analytic" resources for theology. The Afterword, "Iqbal, Peirce and Modernity" written by Professor Peter Ochs, will show how Iqbal's insights, when combined with Peirce's analysis, help us to better understand the theological challenges posed by secular modernity—at the same time that it helps us to better appreciate the intellectual resources that it offers to articulate a more intelligible and effective response.