



Muhammad Iqbal, Charles Peirce and Reclaiming the “Middle Way”

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In the opening paragraph of CMC Paper No. 3 titled “Reason as Balance: The Evolution of ‘aql’” Tim Winter notes that Islam’s self-understanding “as a middle way is both well-known and distinctive” (Winter, 1). This “middle way” can be seen as the historical embodiment “of the original integrative genius of the Prophet” (Winter, 10) whose teachings about Iman, Islam and Ihsan intimated a deep and irreducible relationship between mind, body and spirit. The bulk of Winter’s paper focuses on the way Muslim thought has sought to carve out a “middle way” between the emotional/intuitive and rational/intellectual ways of knowing reality. An overview of Muslim intellectual history shows that a tenuous—but workable and generally accepted—“middle way” between the two approaches has been constructed, challenged and successfully reconstructed repeatedly. This is not surprising in light of the fact that the Sufis find as much evidence for the emotional/intuitive approach in the Qur’an and prophetic traditions as the Mutakallimun find for the rational/intellectual approach. Winter argues that attaining and maintaining a balance (or middle way) between the intuitive and intellectual has been one of the most important factors responsible for the historical dynamism of Islam.

It is no secret that this balance is currently in danger of being permanently lost due to developments within and outside of contemporary Islam because of the fact that the secularizing trends that have sapped the strength of the other monotheistic religions have made significant inroads into Muslim society. This is evident in the most aggressive type of religiosity in contemporary Muslim society—a fundamentalism that imagines it can capture a pristine Islam of the Prophet’s time free from the “un-Islamic” mystical and intellectual accretions

of intervening centuries. This has led to the marginalization of traditional Sufism and Kalam—traditions that have historically embodied the integration of the intuitive and intellectual. The spread of fundamentalist Islam has strengthened the very secularizing trends in Muslim society that produced fundamentalism in the first place. If Winter is correct then the recovery of the lost balance is not just a parochial Muslim concern. Some of the leading thinkers in Europe have drawn attention to the fact that a “fragmented... consciousness” (Winter, 11) has become a defining characteristic modern culture.¹ Consequently, the future well-being of the global West may very well be directly tied to the Muslim recovery of the “middle way”.

It is difficult to argue with the observation that some of the defining developments in modern culture have contributed hugely to the demise of the traditional “middle way”. At the same time there have been other developments that can prove to be uniquely valuable resources that were not available to tradition for re-conceptualizing and reconstructing the “middle way”. This paper is a preliminary inquiry into such resources. It will focus on the work of two early 20th century thinkers to explore what a contemporary reconstruction of “reason as balance” might look like. One is the poet-philosopher Muhammad Iqbal and the other is the scientist-philosopher Charles Peirce. Based on his interpretation of the Qur’an, attachment to Rumi and study of modern scientific thought, Iqbal offers a conception of revelation that is makes it virtually impossible to escape the conclusion that there is a deep and intimate relationship between mind, body and spirit. For his part, Peirce’s philosophical inquiry (which combines insights gleaned from the scholastic realism of Duns Scotus with the practice of scientific inquiry) leads to a conception of reason in which mind, body and heart cannot be separated. As compelling as their conceptions are by themselves, the

full force of their insights comes to fore when their ideas are brought into conversation. Most of the discussion in this paper will focus on presenting evidence that the insights on these two thinkers make it possible to rationally explicate the relationship between revelation and reason in ways that were not previously possible. The ultimate goal of this paper is to demonstrate that an Iqbal-Peirce conversation shows us once again that we must view mind, body and soul in relational terms. Towards this end I will first use Iqbal’s reading of the Qur’an to explore and expand the range of meaning of *wahy* (revelation) and show that *wahy* goes beyond just affirming the validity of *‘aql* (reason). Then I will turn to Peirce’s philosophy (pragmatism) to explore and expand the range of meaning of reason and show that reason goes beyond just affirming the validity of revelation. Iqbal’s insights into the qur’anic use of *wahy* will lend depth to Peirce’s philosophical conception of “instincts”. Conversely, Peirce’s philosophical inquiry into “reason” will lend depth to the qur’anic use of *‘aql*. This mutually deepened description of revelation and reason will reveal an intimate relationship between the two that is not visible otherwise. This Iqbal-Peirce conversation shows that the revelation vs. reason divide can be maintained only on the basis of an unqur’anic conception of *wahy* or an unscientific conception of reason. As we are explicitly transforming the revelation/reason divide into a revelation-reason relationship, it will progressively become clear that there is an intimate and deep relationship between mind, body and spirit. An awareness of the depth of this relationship is a necessary (but insufficient) condition for reclaiming the “middle way” and repairing the fragmented character of modern consciousness.

REVELATION AND THE REALITY OF REASON

Given the fact that the terms “revelation” and “reason” mean a variety of things it is necessary to define them with some precision

for the purpose of beginning the discussion—not completely or exhaustively, but only provisionally and minimally. Peirce notes that instinct/intuition is “a natural gift” (5.359)² found in all living creatures. The purpose and character of this faculty is that: “Every race of animals is provided with instincts well adapted to its needs, and especially to strengthening the stock. It is wonderful how unerring these instincts are. Man is no exception in this respect.” (6.497). Peirce goes on to describe the character and function of reasoning:

[B]ut man is so continually getting himself into novel situations that he needs, and is supplied with, a subsidiary faculty of reasoning for bringing instinct to bear upon situations to which it does not directly apply. This faculty is a very imperfect one in respect to fallibility; but then it is only needed to bridge short gaps. Every step has to be reviewed and criticized; and indeed this is so essential that it is best to call an un-criticized step of inference by another name. (6.497)

Reason comes into play when human beings find themselves in “novel situations” where instinct “does not directly apply”. In these situations human beings make certain inferences that help them in the processes of review and criticism. Consequently, the term “reason” will refer to the “power of drawing inferences” — a power whose acquisition is the result of “a long and difficult art” (5.359). Leaving a more precise definition of revelation and reason to be an emergent result of the discussion and keeping mind that he is in conversation with Iqbal, we will slightly modify Peirce’s terminology and provisionally define these terms as follows:

Revelation: The natural gift of unerring instinct.

Reason: The acquired skill of drawing inferences.

The following pages will detail the

relationship between the “natural gift” and the “acquired skill” in the human attempt to understand the universe and the human being’s place in the universe. While they cannot be considered synonyms, generally speaking the qur’anic term for “revelation” would be *wahy* and *‘aql* for “reason”.

After looking at the hadith literature and sources from the early Muslim community Winter notes: “In primal Islam, the word “*‘aql*...had a supple, comprehensive meaning” (Winter, 8). With the passage of time the range of meaning of *‘aql* became progressively constrained (with the introduction of Greek philosophy playing a significant role in the process). The range of meaning of *wahy* has shrunk no less dramatically than that of *‘aql* during the same period. This is apparent from even a cursory look at the Qur’an. In order to appreciate Iqbal’s argument we have to look at the way the word *wahy* is used in the Qur’an with a view to recover its “supple and comprehensive” meaning. The qur’anic use of *wahy* is not limited to what is often thought of as revelation, i.e. God’s communication with Prophets that leads to scripture. The Qur’an identifies inanimate matter, organic life, and ordinary human beings (other than Prophets) as being the recipients of *wahy*. Referring to the starry heavens above Allah says: “And it is He who decreed that they become seven heavens in two aeons, and sent *wahy* of its function to each of the heavens” (41:12). Commenting on this ayah, the Pakistani mufassir, Amin Ahsan Islahi notes that the term *wahy* refers to Divine commands that assigned the specific function to each of the heavens. (Islahi, vol. 7, 85). Similarly 99:5 states that the Day of Resurrection will commence when the earth responds to the command of Allah given in the form of *wahy*. Both 41:12 and 99:5 provide evidence that inorganic matter can be a recipient of *wahy*. With respect to organic life being the recipient of *wahy*, Allah says in the Qur’an:

*And your Lord has sent wahy to the bee:
“Build yourselves houses in the mountains
and trees and what people construct. Then feed
on all kinds of fruit and follow the ways made
easy for you by your Lord.” (16:68-9)*

Commenting on this passage Islahi notes:

*Here the word wahy refers to that physical and
natural wahy that comes from the Creator...
to all of His creatures so that they are able to
use the intuitive instincts with which they have
been naturally endowed³. (Islahi, vol. 4, 428)*

Islahi’s description of the way *wahy* is used in 16:68-9 is very close to the way instincts is described by Peirce in (6.497). The episode of Prophet Moses’ mother putting the infant Moses in a basket and setting the basket adrift in the river is described in 20:379. The Qur’an informs us in 20:38 that this decision was the result of a *wahy* that had been sent to her. Commenting on the use of *wahy* in this particular instance, Islahi notes:

*It is obvious that the wahy that came to the
mother of Moses was in the form of intuition
and inspiration. This means that Allah put a
suggestion in her heart and she was comforted
by the thought that this suggestion is indeed
from Allah—the suggestion being “Put the
child in a basket and cast the basket into the
river” (20:39). This is the wahy that was
given to the mother of Moses. (Islahi, vol. 5,
43)*

Taking the different ways that the term *wahy* is used in the Qur’an together with the way Islahi has commented on the relevant passages, we can identify at least three different senses in which the Qur’an uses the term *wahy*;

1. The laws of nature that guide the behavior of inanimate matter.
2. The natural instincts that guide the behavior of living creatures.
3. The intuitive inspiration that guides

human behavior in times of need/
crises⁴.

This summary suggests that for the Qur’an there is nothing in the visible, material world that is not touched by *wahy*. In other words, the reception of revelation is a phenomenon that has been experienced by all things in the universe. Muhammad Iqbal perceptively comments on this point:

*Indeed the way in which the word Wahy
(inspiration) is used in the Qur’an shows that
the Qur’an regards it as a universal property
of life; though its nature and character are
different at different stages of the evolution of
life. The plant growing freely in space, the
animal developing a new organ to suit a new
environment, and a human being receiving
light from the inner depths of life, are all cases
of inspiration [wahy] varying in character
according to the needs of the recipient, or the
needs of the species to which the recipient
belongs. (Iqbal, 100)*

Iqbal’s insight that revelation is “a universal property of life” becomes all the more significant when it is combined with an observation that he makes earlier in the discussion:

*The movement of life, as an organic growth,
involves a progressive synthesis of its various
stages. It is determined by ends, and the
presence of ends means that it is permeated by
intelligence. Nor is the activity of intelligence
possible without ends. In conscious experience
life and thought permeate each other. They
form a unity. Thought, therefore, in its true
nature, is identical with life. (Iqbal, 42)*

For Iqbal, at the same time that revelation is “a universal property of life,” thought (or reason) “is identical with life”. If the allowance is made to substitute the term “reason” for “thought” the following picture emerges regarding the relationship of revelation, reason, and life in Iqbal’s thought:

1. Both revelation and reason are inseparable from life.
2. Both manifest themselves according to the needs and capacities required by life.
3. Both are necessary for life to establish a relationship with Reality.

Iqbal's observations suggest that while both of them are equally essential for the well-being, growth, and evolution of life, the role of revelation and reason in the process of growth are different. We will look at each of these points in turn below.

In terms of its origin, life cannot be separated from revelation. Divine Speech, in the form of the primordial Divine Command “Kun!”, is the point of origin of all life in the universe. Without Divine Speech there would be no inorganic matter, organic matter, plant life, animal life, or human life. Just as there can be no “sacred” scripture in the absence of Divine Speech, for Islam there can be no “profane” universe without Divine Speech. Similarly, the Qur'an leaves little doubt that reason has been part of life since the primordial beginning: “We have not created the Heavens and the earth and whatever is between them in sport. We have not created them but for a serious end: but the greater part of them understand it not” (44:38-39). The universe “is not the result of a mere creative sport” it is “a reality to be reckoned with” (Iqbal, 8). If a freely chosen, purposive intent is a sign of reason at work, then we can say that reason was at work even before the primordial imperative “Kun!” was uttered.

While revelation and reason are both universal properties of life (being present at the very primordial beginning) they play different but complementary roles once life begins its worldly career. Iqbal notes that all human beings are born with an inner desire to pursue an ideal. This inner urge to pursue

an ideal is faced by an external environment that simultaneously thwarts and supports the aspiration towards the ideal. Firstly, it is the responsibility of the individual to seize the initiative and respond to the inner calling. Failure to do so has serious consequences:

If he does not take the initiative, if he does not evolve the inner richness of his being, if he ceases to feel the inward push of advancing life, then the spirit within him hardens into stone and he is reduced to the level of dead matter. (Iqbal, 10)

After responding positively to the inner calling, the individual is constantly faced with decisions to distinguish those elements in the environment which facilitate his aspirations from those which thwart them. Reason plays the critical role in helping the individual to make these distinctions and respond appropriately. In short, in the struggle to attain his freely-chosen ideal the human being has no choice but to intellectually engage with the physical environment around him:

According to the Qur'an... the universe has a serious end. Its shifting actualities force our being into fresh formations. The intellectual effort to overcome the obstructions offered by it, besides enriching and amplifying our life, sharpens our insight, and thus prepares us for a more masterful insertion into subtler aspects of human experience. It is our reflective contact with the temporal flux of things which trains us for an intellectual vision of the non-temporal. (Iqbal, 11f.)

Given the fact that “our reflective contact with” the material reality of the universe is a necessary (but insufficient) condition to prepare us for “an intellectual vision of the non-temporal”, intellectual engagement with material reality is an indispensable condition in the spiritual quest. Iqbal succinctly describes the role and limitations of intellectual reason in life's journey towards maturity. He has likened ‘aql to a lamp that lights the path/road

on which one is journeying:

Look past the wonders of 'aql.

It is a lamp to brighten the path, not the destination.

While reason lights the road leading to the destination, revelation provides the new provisions needed to deal with the novelty and change experienced while on the road. Even though part of the following quote has been cited above, looking at it in a wider context illustrates the point vividly:

A prophet may be defined as a type of mystic consciousness in which "unitary experience" tends to overflow its boundaries, and seeks opportunities of redirecting or refashioning the forces of collective life. In his personality the finite centre of life sinks into his own infinite depths only to spring up again, with fresh vigour, to destroy the old, and to disclose the new directions of life. This contact with the root of his own being is by no means peculiar to man. Indeed the way in which the word Wahy (inspiration) is used in the Qur'an shows that the Qur'an regards it as a universal property of life; though its nature and character are different at different stages of the evolution of life. The plant growing freely in space, the animal developing a new organ to suit a new environment, and a human being receiving light from the inner depths of life, are all cases of inspiration [Wahy] varying in character according to the needs of the recipient, or the needs of the species to which the recipient belongs. (Iqbal, 100)

In addition to being universal properties of life and playing equally important (but different) roles in life's evolutionary journey, revelation and reason are equally indispensable for life to establish a relationship with Reality. To illustrate this last point we will focus on Iqbal's description of the meaning of prayer. Iqbal begins the discussion by noting "religious ambition soars higher than

the ambition of philosophy. Religion is not satisfied with mere conception; it seeks a more intimate knowledge of and association with the object of its pursuit" (Iqbal, 70f.). Prayer is the primary means by which religion pursues its supra-philosophical aim. Prayer has a cognitive element and like intellectual cognition it seeks to assimilate and synthesize the multiplicity of phenomena into a unified whole. But "the assimilative process in the case of prayer draws itself closely together and thereby acquires a power unknown to pure thought" (Iqbal, 71). Iqbal goes on to note:

In fact, prayer must be regarded as a necessary complement to the intellectual activity of the observer of Nature. The scientific observation of Nature keeps us in close contact with the behavior of Reality, and thus sharpens our inner perception for a deeper vision of it. (Iqbal, 72)

At this point Iqbal quotes verses from Rumi to compare the scientific-intellectual and mystical-prayerful quests to know Reality:

The sufi's book is not composed of ink and letters, it is not but a heart white as snow.

The scholar's possession is pen-mark's. What is the sufi's possession?—Footmarks.

The sufi stalks the game like a hunter: he sees the musk-deer's track and follows the footprints.

For some while the track of the deer is the proper clue for, but afterwards it is the musk-gland of the deer that is his guide.

To go one stage guided by the scent of the musk-gland is better than a hundred stages of following the track and roaming about.

Following through on Rumi's metaphor, it would be difficult to find a deer hunter in history who became an expert in following the musk-scent of a deer without first mastering the art of following the footprints.

Similarly for Iqbal intellectual mastery over the natural, physical environment is an essential pre-requisite for a disciplined and meaningful encounter with the spiritual dimension of Reality. Iqbal does not see the way of the mystic as an anti-intellectual alternative to the way of the scientist—rather he sees the way of the scientist as one version of the way of the mystic:

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 a point where the scent of the musk gland is a better guide than the footprints of the deer. (Iqbal, 73)

Two other aspects of prayer are relevant to the discussion at hand; 1) congregational prayer and 2) the physical aspects of prayer. Iqbal notes: “The real object of prayer... is better achieved when the act of prayer becomes congregational. The spirit of all true prayer is social” (Iqbal, 73). Congregational prayer “multiplies the normal man’s power of perception, deepens his emotion, and dynamizes his will to a degree unknown to him in the privacy of his individuality” (Iqbal, 73). In other words, prayer in community helps the individual believer attain intellectual and spiritual heights that simply cannot be achieved by means of private worship. Similarly, while one should not get carried with the physical rituals involved in prayer, adhering to the physical and material strictures in prayer opens up possibilities that are otherwise closed. This is due to the fact that physical postures have a direct impact on intellectual attitudes and spiritual ideals. Iqbal notes:

[W]e cannot ignore the important consideration that the posture of the body is a real factor in

determining the attitude of the mind. The choice of one particular direction in Islamic worship is meant to secure the unity of feeling in the congregation, and its form in general creates and fosters the sense of social equality inasmuch as it tends to destroy the feeling of rank or race superiority in the worshippers. (Iqbal, 74f.)

Iqbal describes the directive purpose of prayer in these words:

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 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)

Stated a bit differently, prayer is the physical, intellectual and spiritual exercise which helps the believer(s) establish physical, intellectual and spiritual connections with Reality. Since Reality itself is composed of physical, intellectual and spiritual elements, failure to establish connections with any of the three levels means that one’s relationship with Reality is deficient.

Iqbal’s forceful and sophisticated affirmation of reason based on his interpretation of Qur’anic revelation is very much in line with the way that the Qur’an uses the term ‘*aql*. The Qur’an leaves no doubt that the Self of the Qur’an is “revelation”. But this does not mean that the Other as “reason” is dismissed, condemned or left unaddressed in the Qur’an—quite the contrary. It is difficult to find a non-philosophical text in world literature which discusses the topic of reason as often and in as much depth as the Qur’an. The complementary relationship between *wahy* and ‘*aql* is illustrated by the way that the Qur’an continually exhorts human beings to use their ‘*aql* properly. On nearly 24 occasions the Qur’an condemns

those who deprive themselves of the light and guidance contained in *wahy* because they misuse their ‘*aql*. For example, the Qur’an has Prophet Abraham say the following to the idol worshippers: “Shame upon you and that which you worship besides Allah! Will you not, then use your ‘*aql*?” (21:67). On the Day of Judgment, Allah will say to those who followed Satan: “He had already led astray a great many of you: could you not, then, use your ‘*aql*?” (36:26). On nearly 36 other occasions the Qur’an states that those who use their ‘*aql* properly will be blessed with the ability to interpret Allah’s ayaat (or signs) properly in revelation as well as in the world of nature. For example: “Thus do We spell out these ayaat unto people who use their reason” (30:28). The following ayah explicitly links the proper use of reason to proper interpretation of ayaat in the world of nature:

And in the succession of night and day, and in the means of subsistence which God sends down from the skies, giving life thereby to the earth after it had been lifeless, and in the change of the winds: [in all this] there are ayaat for people who use their reason. (45:5)

The Qur’an often refers to itself (and previous revelations) as “light” and “guidance”. While it never explicitly says that human reason is “light” or “guidance,” on nearly 60 different occasions the Qur’an does say that that “light” and “guidance” (i.e. revelation) cannot be properly understood without the aid of reason. In sum, Iqbal’s philosophical affirmation of reason is very much in line with both the letter and the spirit of the contents of the Qur’an.

The primary goal of the foregoing discussion has been to open up the range of meaning of *wahy*. As he helps us to recover the qur’anic range of meaning of *wahy*, Iqbal also shows us how the Qur’an affirms the validity of reason no less forcefully than the validity of revelation. Along the way we also learn

that from the qur’anic perspective there is an intimate and irreducible relationship between mind, body and spirit. Having recovered the supple and comprehensive meaning of *wahy*, we move to recovering the supple and comprehensive meaning of reason. And for this purpose we turn to the work of the American philosopher Charles Sanders Peirce.

REASON AND THE REALITY OF REVELATION

In the same way that Iqbal’s analysis shows that the range of meaning of *wahy* is much broader than ordinarily assumed, Peirce’s analysis shows that the same is the case for the meaning of reason. Just as Iqbal sees *wahy* as a universal property of life, Peirce sees thought (or reason) as a universal property of life:

Thought is not necessarily connected with a brain. It appears in the work of bees, of crystals, and throughout the purely physical world; and one can no more deny that it is really there, than that the colors, the shapes, etc., of objects are really there... Not only is thought in the organic world, but it develops there. (4.551)

For Peirce, thought (or reason) permeates all of the physical world. Philosophy is the science which is most directly concerned with scientific analysis of the universal phenomenon that is reason. For Peirce philosophy is not some vague, imprecise “love of wisdom”. He describes philosophy as a “positive science, in the sense of discovering what really is true [universally]; but it limits itself to so much of truth as can be inferred from common sense experience” (1.184).

In contrast to the Qur’an which does not go beyond giving examples of good/bad reasoning, lauding the proper use of reason and warning against the misuse/abuse of reason, providing a precise description and typology of reason is a central concern for philosophy. Logic is the one area in philosophy which is most directly concerned with the study of reason. After noting that

the “chief business of logicians is to classify arguments” (2.619) Peirce goes on to note that logicians before him had identified only two types of argument (or inference)—deductive and inductive. He argues that while they play a critical role during the course of inquiry, deduction and induction do not generate any new ideas or knowledge claims. Deduction provides the tools to articulate knowledge claims with objective precision. Induction is chiefly concerned with identifying the criteria that must be met to verify the validity of knowledge claims. But neither deduction nor induction can be credited with the genesis of the knowledge claim that is rendered precise by deduction and tested by induction:

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. (6.475)

That which deduction explicates and induction evaluates “is first laid by Retroduction alone, that is to say, by the spontaneous conjectures of instinctive reason; and neither Deduction nor Induction contributes a single new concept to that structure” (6.475). Here Peirce is rendering explicit what has been vaguely hinted at by the logicians before him—there are three types of inference, not two. Peirce calls the third type of inference “Retroduction” or “abduction”. For Peirce, all discoveries and new knowledge claims are exclusively the product of abductive inference.

Peirce is quite assertive in his claim that all the great scientific discoveries through the ages have been the result of instinctive, abductive inferences. He 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). Peirce argues that appreciating the central role of instinctive inferences in scientific inquiry is a fundamental prerequisite for appreciating Galileo’s key insight that when two hypotheses suggest themselves, one must choose the simpler of the two. Peirce notes that Galileo does not mean the “logically simpler” he means

the simpler Hypothesis in the sense of the more facile and natural, the one that instinct suggests, that must be preferred; for the reason that, unless man have a natural bent in accordance with nature’s, he has no chance of understanding nature at all. (6.477)

In sum, for Peirce human instincts provide the most compelling evidence for the claim that human beings have the capacity to understand the world of nature around them. He goes on to argue that under certain circumstances, this natural gift is a more reliable source of knowledge than deductive or inductive reasoning:

No concept, not even those of mathematics, is absolutely precise; and some of the most important for everyday use are extremely vague. Nevertheless, our instinctive beliefs involving such concepts are far more trustworthy than the best established results of science, if these be precisely understood. For instance, we all think that there is an element of order in the universe. Could any laboratory experiment render that proposition more certain than instinct or common sense leave it? It is ridiculous to broach such a question. But when anybody undertakes to say precisely what that order consists in, he will quickly find he outruns all logical warrant. Men who are given to defining too much inevitably run themselves into confusion in dealing with vague concepts of common sense. (6.496)

Most human beings during most of their routine activity find their instincts and

common sense to be more than sufficient in their mundane pursuits. When human beings do turn to deductive and inductive reasoning it is only under special circumstances and for very specific and limited purposes — most notably the articulation and testing of knowledge claims. Those who try to substitute induction and deduction where instinctive beliefs are sufficient quickly outrun “all logical warrant” and “run themselves into confusion”.

Peirce goes on to detail the fact that in cases where certain “common sense” propositions are found to be wrong or unwarranted, it is not due to the fallibility of human instincts but to the fallibility of human reasoning:

[W]hile I may entertain, as far as I can search my mind, no perceptible doubt whatever of any one of a hundred propositions, I may suspect that, among so many, some one that is not true may have slipped in; and, if so, the marvelous inerrancy of instinct may perhaps add a little to my general confidence in the whole lot. (6.498)

Peirce argues that he is not the first modern philosopher to appreciate the relationship of instincts with knowledge claims — this relationship is obvious from a careful reading of Hume:

The fourth part of the first book of Hume’s Treatise on Human Nature affords a strong argument for the correctness of my view that reason is a mere succedaneum to be used where instinct is wanting, by exhibiting the intensely ridiculous way in which a man winds himself up in silly paper doubts if he undertakes to throw common sense, i.e. instinct, overboard and be perfectly rational...[A] careful reader will see that if [Hume] proves anything at all by all his reasoning, it is that reasoning, as such, is ipso facto and essentially illogical, “illegitimate,” and unreasonable. And the reason it is so is that either it is bad reasoning, or rest on doubtful premises, or else that those

premises have not been thoroughly criticized. (6.500)

It is not only a careful reading of Hume that affirms Peirce’s hypothesis that “reason is a mere succedaneum to be used where instinct is wanting,” a look at the evolution of scientific knowledge also confirms this point:

Another circumstance which goes toward confirming my view that instinct is the internal resource of all wisdom and of all knowledge is that all the “triumphs of science,” of which that poor old nineteenth century used to be so vain, have been confined to two directions. They either consist in physical — that is, ultimately, dynamical — explanations of phenomena, or else in explaining things on the basis of our common sense knowledge of human nature. Now dynamics is nothing but an elaboration of common sense; its experiments are mere imaginary experiments. So it all comes down to common sense in these two branches, of which the one is founded on those instincts about physical forces that are required for the feeding impulsion and the other upon those instincts about our fellows that are required for the satisfaction of the reproductive impulse. Thus, then all science is nothing but an outgrowth of these two instincts. (6.500)

For Peirce, “the internal resource of all wisdom and of all knowledge” that forms the foundation of all “the triumphs of science” is nothing but instincts. To emphasize this point further, Peirce notes that “all science is nothing but an outgrowth of” human instincts.

Peirce’s inquiry into the different elements of which reason is composed reveals that human reason is not a homogeneous, uniform phenomenon. It is composed of three different (but intimately related) heterogeneous elements. Each of the three different types of inferences has unique characteristics that make it impossible to either reduce it to the other two or to reduce

the other two to it. We can summarize Peirce’s insights as follows:

1. Abduction is the source of all scientific discoveries and new knowledge claims.
2. Deduction makes it possible to formulate the knowledge claim with objective precision.
3. Induction makes it possible to test the validity of the knowledge claim.⁵

By this point in the discussion we have looked at two issues from two different perspectives: a) revelation (or *wahy*) as it is employed in the Qur’an, through the interpretive lens offered by Iqbal and b) reason as it is understood in philosophy through the analysis offered by Peirce. The time has come to bring the two perspectives side by side and look at the result that emerges. The summary of Peirce’s understanding of reason has been offered in the previous paragraph. The summary of Iqbal’s observation that revelation is a “universal property of life” was offered at the end of the discussion on the different ways that the word *wahy* is employed in the Qur’an. In addition to referring to the phenomenon of God’s communication with Prophets that eventually leads to scripture, we noted that the word *wahy* is used to describe:

1. The laws of nature at work in the world of inanimate matter.
2. The natural instincts at work among living creatures.
3. The intuitive inspiration that guides human beings in times of crises.

Putting Iqbal and Peirce side by side shows that there is an overlap between *wahy* as intuitive inspiration and natural instinct on the one hand and abductive inference on the other. The overlap between *wahy* and abduction is such that one can easily take Peirce’s description of abductive inference

and put it wherever Iqbal talks about intuitive inspiration and natural instinct. And conversely one can take Iqbal’s description of *wahy* as intuitive inspiration and natural instinct and use it wherever Peirce talks about abductive inference. In sum Iqbal’s opening up the range of meaning of revelation allows to make the claim that Peirce’s conception of reason sees reason as a valid source of knowledge. Conversely, Peirce’s opening up of the range of meaning of reason allows us to see appreciate more fully Iqbal’s qur’anicly grounded claim that thought/reason is “a universal property of life”.

In light of the analysis offered by Iqbal and Peirce there are only two ways to continue to maintain the reason vs. revelation divide. The first is to claim that *wahy* is nothing other than God’s revelation to the Prophets that eventually leads to scripture. Iqbal has demonstrated that this is a false claim on qur’anic grounds. The second is by claiming that reason is nothing more than deduction or induction or some combination of the two. Peirce has demonstrated this is a false claim on philosophical grounds. We can conclude the previous two sections by noting that independently of each other, Iqbal and Peirce have demonstrated that there is an intimate relationship between revelation and reason. When we take the investigation further we find that both revelation and reason do more than just acknowledge the validity of the other from afar or in purely theoretical terms—in a very real sense the inner core of revelation affirms the reality of reason and the inner core of reason affirms the reality of revelation.

DEEPENING THE REVELATION-REASON RELATIONSHIP

In the first section of this paper we saw how Iqbal draws our attention to the fact that the Qur’an regards revelation “as a universal property of life”. Revelation, in the form of inspiration, descends upon a given individual

“according to the needs of the recipient, or the needs of the species to which the recipient belongs” (Iqbal, 100). The primary (and perhaps the sole) purpose of revelation is to aid the continued evolution of life as it reaches for new horizons, responds to novel challenges and strives to attain new visions of reality. Among the human race this phenomenon manifests itself in a select few individuals in an especially intense form in what Iqbal calls, “prophetic consciousness—a mode of economizing individual thought and choice by providing ready-made judgments, choices, and ways of action” (Iqbal, 100). Belief in Prophecy (that there is a line of Prophets extending from Adam to Muhammad—peace be upon them all) is as much of a central doctrine in Islam as the doctrine of the Finality of Prophethood (that the Noble Prophet is last in this line and Prophecy comes to an end in his person). The manner in which Iqbal interprets the cultural and philosophical significance of the doctrine of Finality leads to the conclusion that the innermost core of revelation affirms the reality of reason. Iqbal’s interpretation of the implications of the doctrine of Finality leads to the conclusion that the end of Prophecy is a prelude to the beginning of a new stage in the evolution of life:

In Islam prophecy reaches its perfection in discovering the need of its own abolition. This involves the keen perception that life cannot forever be kept in leading strings; that, in order to achieve full self-consciousness, man must finally be thrown back on his own resources. (Iqbal, 101)

With the end of Prophecy human reason is the primary resource on which the human being is “thrown back” in order to move from the stage of consciousness to the stage of self-consciousness. It is only when life has attained self-consciousness that it can free itself from “leading strings” and enjoy real freedom. Iqbal notes that the doctrine of

Finality manifests itself in all aspects of human culture:

The abolition of priesthood and hereditary kingship in Islam, the constant appeal to reason and experience in the Qur’an, and the emphasis that it lays on Nature and History as sources of human knowledge, are all different aspects of the same idea of finality. (Iqbal, 101)

Iqbal offers a cautionary note on what the doctrine of Finality does not mean: The idea of finality should not be taken to suggest that the ultimate fate of life is complete displacement of emotion by reason. Such a thing is neither possible nor desirable (Iqbal, 101). The fact that the complete displacement of emotive intuition by rational reason is neither desirable or possible is amply supported by hadith literature. The following ahadith not only evidence that *wahy* as Prophecy has come to an end but also show that *wahy* in forms other than Prophecy will continue in the post-prophetic period.

- “Nothing is left of Prophecy except Mubashhirat. He was asked: “What are Mubashhirat?” He replied: “True dreams”. Sahih Bukhari Bab-ul-Mubashshirat #6607
- “Prophecy has ended and only Mubashshirat are left.” Sahih ibn Hibban #6139
- “True dreams of a righteous person is the 46th part of prophecy.” Sahih Bukhari, Kitab-ut-Tabeer #6600

After discussing the doctrine of Finality in doctrinal terms, Iqbal goes on to detail the intellectual (or philosophical) significance of the claim that Prophecy has reached its culmination and termination in the person of the Blessed Prophet. The crux of this significance is that all domains of experience, inner experience no less than outer experience, are now open to reasoned and

rational scrutiny:

The intellectual value of the idea is that it tends to create an independent critical attitude towards mystic experience by generating the belief that all personal authority, claiming a supernatural origin, has come to an end in the history of man. This kind of belief is a psychological force which inhibits the growth of such authority. The function of the idea is to open up fresh vistas of knowledge in the domain of man's inner experience. Just as the first half of the formula of Islam has created and fostered the spirit of critical observation of man's outer experience by divesting the forces of Nature of that Divine character with which earlier cultures had clothed them. Mystic experience, then, however unusual and abnormal, must now be regarded by a Muslim as a perfectly natural experience, open to critical scrutiny like other aspects of human experience. (Iqbal, 101)

Iqbal argues that the first part of the kalima shahada (declaration of faith) “There is not god but Allah” opened up the world of Nature (or external experience) to scientific, rational inquiry. The second part of the kalima “and Muhammad is Prophet of Allah” does away with all notions of “personal authority, claiming a supernatural origin” and opens up all mystical and spiritual experience to scientific, rational inquiry. In sum the doctrine of Finality opens up “fresh vistas of knowledge in the domain of man's inner experience” while at the same time it opens up inner (or spiritual) experience to “critical scrutiny like other aspects of human experience”.

Iqbal notes that the Qur'anic event took place at a time in history when the “non-rational modes of consciousness” played the dominant role in the human quest for knowledge. This places the event of the Qur'an in the ancient world. At the same time the Qur'an sees Nature, History and the Human Self as loci of

Divine self-revelation. The Qur'an repeatedly states that should human beings subject Nature, History, and the Human Self to reasoned scrutiny they will discover the same truths towards which the Qur'an itself points. For Iqbal this latter point is a watershed event in human intellectual history as it signals the inductive intellect taking the lead in the human search for knowledge. Putting these two points together, the following observation by Iqbal is an apt summation of revelation's affirmation of reason:

Looking at the matter from this point of view, then, the Prophet of Islam seems to stand between the ancient and the modern world. In so far as the source of his revelation is concerned he belongs to the ancient world; in so far as the spirit of his revelation is concerned he belongs to the modern world. In his life discovers other sources of knowledge suitable to its new direction. (Iqbal, 100f.)

For Iqbal the culmination of prophecy in the person of the Blessed Prophet leads to life discovering “other sources of knowledge suitable to its new direction”. In sum Iqbal's understanding of revelation culminates in revelation not only affirming the reality and validity of reason but self-consciously limiting itself so that reason can further develop, evolve and flourish to guide the human quest to better understand the universe and the human being's place in the universe.

How deep is the relationship between revelation and reason? Or put more starkly, how confident is revelation in the ability of reason to guide humanity in the post-prophetic stage of its evolution? For Iqbal, revelation is so confident in the capacity of reason to help humanity move from the stage of consciousness to the stage of self-consciousness that revelation (in the form of Prophecy) has freely and voluntarily terminated itself. Iqbal's understanding of revelation leads him to the conclusion that

the ultimate goal of revelation is twofold: 1) Guide human beings to appreciate the reality and validity of the reasoning abilities that God has given them and 2) to bring to attention the critical role that reasoning abilities will play in the post-prophetic period to interpret knowledge claims in all domains of human experience in the human journey towards self-consciousness.

Looked at from the perspective of Iqbal’s interpretation of the Finality of Prophecy, we see that the Qur’an’s treatment of ‘*aql*’ has gone beyond just an aloof validation of human reasoning capacities. If Iqbal is right then it is obvious that revelation sees the emergence of reason as an indispensable stage in the evolution and development of revelation itself. In other words, one cannot separate the emergence, validity and evolution of revelation from the emergence, validity and evolution of reason. When we look at Peirce’s analysis of the logic of scientific inquiry we find an eerie similarity with Iqbal’s interpretation of the doctrine of the Finality of Prophecy—but with the slight and profound that in Peirce’s philosophy we find a doctrine of the “Finality of Reason”.

On a very basic level, Peirce’s understanding of philosophy cannot be separated from the affirmation of God’s self-revelation. Peirce notes that the fundamental presupposition on which philosophical inquiry is based requires an affirmation of God: “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. Peirce notes:

[T]he 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)

In a slightly different context and in slightly different words, Peirce makes the same basic point. He says that 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. Peirce thinks that “we must regard Creative Activity as an inseparable attribute of God” (6.506) and while it may be difficult (to the point of being impossible) to define with absolute precision, “it is nevertheless true that all reality is due to the creative power of God” (6.505). Consequently it is not possible to become “acquainted with the glories of God” 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). Here it is worth mentioning that for Peirce the term “god” has a very specific meaning. It does not have anything to do with some immaterial, impersonal artificially concocted fiction which has been variously called the Prime Mover, Monad, Transcendental Ego, Universal Mind, etc. Using philosophical language, God refers to the following:

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 non-philosophical terms this is the God of the Bible—the God who sent *wahy* to Adam, Noah, Abraham, Moses, and Jesus (among others). To the degree that the Qur’an is a continuation of the biblical tradition, this is also the God who sent *wahy* to the Blessed Prophet. Allah is described as “the First and the Last, the Manifest and Hidden” (57:3)

whose ayaat are to be found in the previously revealed Books, the Qur’an and “every state of the universe at a measurable point in time” (i.e. Nature, History, and Self).

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. Every argument is a process that begins with certain abductive inferences, that are then deductively systematized and articulated. And if the argument is scientific in nature then it is open to inductive testing. Only that knowledge claim can aspire to the status of scientific validity which has passed through all three stages. The task of philosophy is to render relatively precise the vague sentiments underpinning the abductive inferences, to make explicit the implicit assumptions underpinning deductive systematization and to set forth the criteria for inductive testing. In short, the task of philosophy is to bring the conscious and sub-conscious elements of an argument to the level of self-consciousness.

Peirce describes the character of the universe as argument in more detail: “The Universe as an argument is necessarily a great work of art, a great poem—for every fine argument is a poem and a symphony—just as every true poem is a sound argument” (5.119). By identifying a sound argument as a “poem and a symphony” Peirce draws our attention to the limitations that scientific philosophy must place on itself. Generally speaking science and philosophy are considered a matter of the head/intellect/mind that have nothing (or should have nothing) to do with the heart/sentiment/feeling. It is obvious that the head/intellect/mind are indispensable at a specific stage when one is attempting to understand “a great work of art, a great poem” or “a great symphony”. But it is even more obvious that any attempt to understand them using intellectual capacities alone is destined to failure. Understanding an argument (as

the term is described by Peirce) ultimately requires the use of the intuitive capacities. This is especially the case if one wants to understand the argument that is the universe: “as to God, open your eyes—and your heart, which is also a perceptive organ—and you see him” (6.493).

For Peirce there is no such thing as scientific philosophy until and unless limits are placed on the reasoning intellect and intuitive feelings are accorded an appropriate place in the philosophical and scientific quests. Peirce notes: “In regard to the greatest affairs of life, the wise man follows his heart and does not trust his head. This should be the method of every man, no matter how powerful his intellect” (1.653). Peirce has described philosophy as a “theoretical science” but at the same time every theoretical science is also a “practical affair”. To the degree that philosophy is a practical affair, it must make room for the heart/sentiments/feelings. Peirce acknowledges that it is possible to philosophize solely on the basis of head/intellect/mind and there is no shortage of schools of philosophy that do so. While he is referring to one particular type of such a philosophy (i.e. nominalism) the observation below applies to all such philosophies:

This is a philosophy which leaves no room for a God! No, indeed! It leaves even human consciousness, which cannot well be denied to exist, as a perfectly idle and functionless flaneur in the world, with no possible influence on anything—not even upon itself. (1.162)

In addition to not leaving any room for God and human consciousness, this unscientific philosophy ultimately fails to explain the “most obvious” of the observed characteristics of the physical universe (1.162). For Peirce the very same philosophy that identifies human reason and intellect as the only source of reliable knowledge rejects not just the reality of God, human consciousness, the

intuitive heart—it fails to see that the defining characteristics of the universe around us are continuity, relationship and growth.

In so many words, Peirce is saying that the refusal to go beyond reason and turn to intuitive capacities at a certain stage in the quest for knowledge means the abandonment of scientific knowledge. The careful reader will have noticed that there is something like the doctrine of “Finality of Reason” in Peirce’s philosophy that mirrors the doctrine of the “Finality of Prophecy” as interpreted by Iqbal. For Iqbal “Finality of Prophecy” is a religious doctrine that puts a limit on revelation so that the intellectual capacities of human beings can develop further and reach maturity. For Peirce the “Finality of Reason” is a philosophical doctrine that puts a limit on reason so that the intuitive capacities of human beings can remain healthy and vibrant. Just as Iqbal’s turn to the intellect is demanded not by *‘aql* but by *wahy*, Peirce’s turning to the heart is demanded not by revelation but by reason. Peirce’s pragmatist reason reaches the conclusion that human beings must turn to the heart at certain points in their journey to better understand the universe and their place in the universe. The doctrine of Finality of Prophethood as understood by Iqbal implies that if reasoning as a mode of inquiry is not cultivated and adopted then the understanding of revelation will (necessarily) remain defective. Similarly, Peirce’s comments about the role of the heart and the limitations of reason leave no doubt that the philosophical quest is doomed to failure if the instinctual and intuitive capacities are not cultivated. It is obvious that Iqbal’s interpretation of scripture and Peirce’s philosophical investigation of reason have transformed the revelation/reason dichotomy into a revelation-reason relationship. The Iqbal-Peirce conversation allows us to identify three characteristics of this relationship: 1) Both revelation and reason affirm the reality of the other, 2) both acknowledge their

own limitation with respect to the goal of attaining knowledge of and intimacy with Reality and 3) both acknowledge that the other is required in any honest, truthful and sincere pursuit of knowledge and relationship with Reality. This last point may be another way of saying that just as revelation requires the aid of reason for its self-realization and self-fulfillment, reason requires the aid of revelation for its self-realization and self-fulfillment.

A FINAL WORD

In closing it would be worthwhile to explicitly identify the sources that the two thinkers use to effect the turn the debilitating dichotomies into life-affirming relationships. Iqbal’s *falsafa-e-khudi* is built on his interpretation of the Qur’an in line with a particular strand of the Sufi poetic, literary tradition. Peirce’s pragmatism is built on the Western philosophical tradition and mathematics (there is a four volume work by Peirce titled *New Elements in Mathematics*). Both of them explicitly acknowledged the debt that they owe to Abrahamic religion. Iqbal identified his *falsafa-e-khudi* to be an explication and elucidation of Qur’an 59:18–24.⁶ Peirce noted that pragmatism is based on a maxim derived from Matthew 7:15–20.⁷ At the same both of them are deeply rooted in their respective pre-modern intellectual traditions and equally deeply imbued with the spirit of modern science. Iqbal patterned his masterpiece *Javed Nameh* as a dialogue between the Indian student (Iqbal) being guided by the Roman teacher (Rumi). He earned (and embraced) the sobriquet Rumi-e-Thani (Rumi II) in his lifetime. A look at Iqbal’s bibliography in *The Reconstruction of Religious Thought in Islam* shows that he had read some of the most important books on physics, biology, psychology, and philosophy written in the West prior to 1928. He is knowledgeable enough in these areas to distinguish the

physics of Whitehead from that of Einstein, to appreciate the philosophical significance of emergent evolution and to identify the shortcomings of auto-suggestion and see the promise of configuration psychology. For his part Peirce explicitly identified himself with the scholastic realism of Duns Scotus. He was trained as a chemist, worked as a geodesist, counted some of the most eminent scientists of the day among his friends and was in intellectual correspondence with the leading mathematicians and logicians of his day. Both thinkers integrated spiritual wisdom (from scripture), facts about material reality (from science) and the intellectual discipline of philosophy in their work. Separately both of them show that an integration of the spirit, body and mind is possible in the aftermath of the Cartesian turn. Together they point the way to the rational explication of the “middle way” with a clarity and coherence that was not possible in the pre-modern period of human history.

As noted in the introduction, this is only a preliminary exploration of the topic. The goal of the inquiry was to offer an abductive hypothesis that the works of Iqbal and Peirce contain uniquely valuable resources that can help us to reclaim the “middle way” by (re) integrating body, mind and heart is a way that speaks to us and our times. The bulk of this paper was dedicated to expressing the abductive hypothesis in deductive terms. The inductive testing of the hypothesis remains to be done. This test would examine if the insights gleaned from the Iqbal-Peirce conversation help us to better understand and redress the different challenges facing contemporary thought in both the world of Islam and the West. If it is indeed the case that the Iqbal-Peirce conversation contains uniquely valuable resources to reclaim the “middle way” and heal the fractures of a fragmented modern consciousness then the following should be the case: Their insights help us to understand and

bridge the dichotomies of faith/rationality, religion/science, spirit/matter, free-will/predestination, temporal/eternal, hard sciences/soft sciences, public/private, labor/capital, individual/collective, etc. better than alternative approaches. The inductive testing of the hypothesis offered in this paper is a task for the future. ☞

ENDNOTES

- 1 From across the Atlantic we may add the names of Walker Percy (2000), Robert Bellah (2000) and Peter Berger (1983) who have drawn attention to the detrimental effects of a “fragmented consciousness” on the present and future well of modern culture.
- 2 Quotations from Peirce’s Collected Papers are conventionally cited in the following format (volume number, paragraph number).
- 3 The passages from Islahi are from his Urdu tafseer *Tadabbur-e-Qur’an*. The translation from Urdu to English is my own.
- 4 The semantic field of *wahy* is even larger than suggested above. *Wahy* is also used to describe the means by which the evil ones from among humans and jinn encourage each other to oppose the Prophets in 6:112 and to dispute with the believers in 6:121. In 8:12 *wahy* is used to describe the way in which Allah communicated with the angels when instructing them to convey His message to the believers during the Battle of Badr. In 19:11 the word *wahy* is used to describe the non-verbal, gesticulating manner in which Zakariyya communicated with the people during the three days of thanksgiving after his prayer for a son had been accepted by Allah. For a more detailed discussion of the semantic field of *wahy* and its use in pre-Islamic poetry see Toshihiko Izutsu (2005) pp. 163–215.

5 It would be worthwhile to pause and look at the place Peirce’s work in the context of 20th century philosophies of science. In spite of unbridgeable differences on other levels, the historian of science Gerald Holton notes that practically all 20th century philosophies of science share some common characteristics:

All philosophies of science agree on the meaningfulness of two types of statements, namely propositions concerning empirical matters that ultimately boil down to meter readings and other public phenomena, and propositions concerning logic and mathematics that ultimately boil down to tautologies. The first of these, the propositions concerning empirical matters of fact, can in principle be rendered in protocol sentences in ordinary language that command the general assent of a scientific community; I like to call these *phenomenic propositions*. The second type of propositions, meaningful in so far as they are consistent within the system of accepted axioms, can be called *analytic propositions*. (Holton, 5)

Considering only *phenomenic* and *analytic* propositions to be meaningful, gives rise to a “two-dimensional view” of the space on which scientific inquiry takes place. Being a historian who has studied the lab notebooks, personal letters and autobiographical notes of the leading physicists of the 19th and early 20th centuries (particularly Einstein), Holton notes that there is compelling evidence to show the inadequacy of a two-dimensional view of science:

[W]e must now reexamine the mnemonic device of the two-dimensional plane. I remove this insufficiency by defining a third axis, rising perpendicularly out of it. This

is the dimension orthogonal to and resolvable into the phenomenic or analytic axes. Along it are located those fundamental presuppositions, often stable, many widely shared, that show up in the motivation of the scientist’s actual work, as well as in the end-product for which he strives. Decisions between them are, insofar as they are consciously made, are judgmental... Since they are not directly derivable from either observation or from analytic ratiocination, they require a term of their own. I call them *themata*... (Holton, 17ff.)

Holton’s work is one example of the evidence that has progressively accumulated during the 20th century that there is fundamental flaw in the two-dimensional view of science taken to be a given by the rationalist and empiricist, positivist and a-priorist, inductivist and deductivist philosophies of science. Thomas Kuhn, Carl Hempel, Imre Lakatos and Michael Polanyi are among those whose work points towards a three-dimensional view of science. But with the third dimension gradually coming into view a claim has been put forward that there is no such thing as a “scientific method”. This view is forcefully advocated by Paul Feyerabend as the title of his well known book indicates, *Against Method*. When compared with the dominant philosophies of science in the 20th century and the anarchistic critiques of these philosophies, Peirce’s philosophy of science has the following advantages: 1) It leads to a three-dimensional view of science, 2) it reconciles the fact that certain intuitive and imaginative factors are at work in scientific inquiry with the claim that there is such a thing as “scientific method” and 3) it establishes a link between the logic of scientific inquiry and a theory of aesthetics and ethics. On this last point Peirce’s

pragmaticism shows that there is an intimate link between self-conscious controlled feeling (aesthetics), self-conscious controlled thought (logic) and self-conscious controlled action (ethics).

- 6 Sayyid Nazir Niazi records a personal conversation that he had with Iqbal. Niazi asked Iqbal to explicitly identify the sources of ideas. Iqbal asked Niazi to bring pen and pencil with him the following day and he will answer his question. Niazi describes the meeting in these words:

The next day I visited Iqbal and came prepared with pen and paper. Iqbal said: “There is a Qur’an in the cabinet in front of you, bring it to me”. I thought that I will be asked to list the pages and passages of some books on philosophy. When I brought the Qur’an to him, he told me: “Write down the last ruku of Surah al-Hashr” [59:18-24]. (Hashmi, 260)

- 7 Peirce concludes the section titled “The Pragmatic Maxim” in his paper “How to Make Our Ideas Clear” with these words:

It appears, then, that the rule for attaining the third grade of clearness of apprehension is as follows: 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)

He inserts an endnote acknowledging that the central maxim in pragmatics “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”.

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