

I

Concepts of Relevance to Epistemological Integration

GOALS OF THIS CHAPTER

1. To define the term “epistemological integration” and to clarify related concepts and ideas.
2. To clarify the relationship between epistemological integration and the unity of knowledge.
3. To explain how epistemological integration is based on the principle of divine unity.
4. To locate epistemological integration within the Islamic worldview.
5. To draw attention to the obstacles and constraints that hinder achieving epistemological integration.
6. To justify having epistemological integration as a frame of reference for Islamic methodology in relation to thought, research, and sound ways of dealing with questions relating to knowledge and behavior.
7. To build a model for epistemological integration in the following three areas: integration of sources, integration of tools, and integration of sources and tools together.

INTRODUCTION

Certain terms tend to come to the fore in writings pertaining to this field or that, where their use becomes widespread without sufficient attempts to define their meanings clearly. Consequently, one may find a given term being used in different and even contradictory senses in

different contexts. This may also have happened in connection with the term “epistemological integration.”

The term “epistemological integration” (*al-takāmul al-maʿrifī*) has frequently been used in reference to individuals who have an encyclopedic knowledge of things. Such persons may be acquainted with numerous fields of knowledge, if only in a general sort of way. In this connection, reference is sometimes made to Muslim scholars who achieved epistemological integration in the sense of possessing an encyclopedic knowledge, since they were well-versed in language, literature, Islamic jurisprudence, the Qurʾanic sciences, the Hadith sciences, history, and possibly even astronomy, medicine or mathematics. Imam al-Ṭabarī, for example, was a Qurʾanic exegete, a historian, a jurist, a linguist, and a poet. Ibn Khaldūn was primarily a political adventurer; however, he came to be known as a historian and the Chief Justice of the Mālikī school of jurisprudence in Egypt, while many consider him to have been a pioneer in sociology, economics, education and other fields. Ibn Sīnā (Avicenna) was a philosopher and physician, while Ibn Rushd (Averroes) was a jurist, a scholar of the principles of jurisprudence (*uṣūlī*), a physician, and a philosopher. Similarly, Ibn Taymiyyah wrote in the fields of jurisprudence, the principles of jurisprudence, the Prophetic Sunnah, Islamic mysticism (Sufism), and logic.

The phenomenon of creative production in more than one field of knowledge was clearly a distinguishing feature of the age in which many well-known Muslim scholars lived. However, this phenomenon had also been widely known among ancient scholars, thinkers and philosophers in Greek civilization and elsewhere. The practice of devoting oneself entirely to a single specialization is thus a recent phenomenon in human history; it has emerged in response to the unprecedented expansion that has taken place in human knowledge over the past century, with the result that it has become virtually impossible for a single scholar to specialize in more than one field. Indeed, a single field may well be divided into numerous sub-specializations, each of which is so vast that a single individual can hardly master it.

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Around the middle of the twentieth century, the British Lord S. P. Snow remarked on the communication gap that had come to exist between those specializing in social sciences and the humanities and those specializing in the natural and applied sciences. The situation had grown so dire that Lord Snow described each of the two groups as possessing a culture of its own that had nothing to do with the other. In his well-known work entitled, *The Two Cultures*, he called for the integration of these two estranged “cultures.”¹

In ancient times sages and scholars spoke of integration between knowledge and action.² Ibn Rushd affirmed the possibility of linking wisdom and the divinely given law, while Ibn Taymiyyah affirmed the concept of integration in his insistence that there can be no contradiction between a correct understanding of divinely revealed texts and what is clear to human reason. Similarly, al-Qushayrī and other Sufis combined “the path” (*al-Tarīqah*), that is, the Sufi way of life, and “the truth” (*al-ḥaqīqah*), that is, the truths revealed in the Qur’anic revelation. This was followed by attempts to integrate principles, theories and scientific research on one hand, and their practical applications on the other as “pure” science and technology joined hands. In the early twentieth century it became clear that Physics stood in need of Mathematics, and Biology in need of Chemistry, which led in turn to the development of interdisciplinary research, publications and instruction, since it was now recognized that evolution and development in one of the sciences are dependent upon other sciences as well. A number of ideas have since been put forward in connection with the integration of science and religion. Similarly in the field of education, increasing efforts have been made to construct integrated curricula. There is now a greater awareness of the need for ideas related to the integration of tradition with modernity, and so on.

This chapter aims to clarify concepts relating to epistemological integration in its historical and modern contexts and how they relate to other concepts such as the unity of knowledge, worldview, classification of schemes of knowledge, and Islamization of knowledge. In addition, an attempt will be made to explain the nature of the issues with which epistemological integration concerns itself, and the obstacles in the way of achieving epistemological integration. This chapter will

provide an introduction to the discussions in later chapters of the forms integration has taken within the Islamic framework, particularly in relation to the links between the various sources of knowledge, between the various means of acquiring knowledge, and between such sources and means.

First: EPISTEMOLOGICAL INTEGRATION
VS. THE UNITY OF KNOWLEDGE

The issue of epistemological integration is both ideational-intellectual and methodological in nature in that it is linked with mental activity, research practices, and ways of dealing with ideas. However, the purpose for dealing with the issue of epistemological integration and the method by means of which it is dealt with will determine the epistemological category into which this issue is placed. Epistemological integration might be classified, for example, as a branch of philosophy – ontology, epistemology, or ethics – in which case it takes on an abstract, theoretical dimension. It might also be classified as a type of cultural, social activity when the purpose for which it is undertaken is to provide necessary resources and to transform them into political, economic or social activity in order to facilitate life for people on the practical level, in which case it takes on a social, applied dimension. Investigation of the topic of epistemological integration might also be limited to the task of dealing with the various epistemological fields and evaluating the need for each of these fields in designing programs and curricula for educational institutions, in which case the issue takes on a didactic-pedagogical dimension.

Epistemological integration: Either a theoretical, abstract, philosophical issue, or a practical, applied, social issue.

There are two dimensions to the process of epistemological integration: a productive dimension and a consumptive dimension. In its productive dimension, integration is a form of intellectual creativity which requires special skills. Thus, for example, the process of integrating the Qur’anic sciences, the humanities and the social sciences

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in their contemporary Western formulations calls for a scholar and researcher, who draws inspiration from God's guidance in understanding the aims and intents of religious texts and rulings and how to apply them to real-life situations and events within a contemporary cultural framework. This understanding involves an important analytical and deconstructive effort. At the same time, however, the researcher will need to be familiar with the reality that relates to a particular epistemological field or specific issue, be it economic, social, or educational, on both the quantitative and qualitative levels. And this necessarily means the ability to deconstruct the issue at hand, identify its elements, and understand the mechanism by which it operates and its underlying theoretical assumptions or premises. This process of deconstruction is a necessary precondition which, if fulfilled, will be the foundation for the achievement of epistemological integration between the two fields of concern in a critical, creative construction process. This constructive process is generally accompanied by an evaluation of the elements that will go into the new amalgam, and the matrix of relationships that bring them together for a new purpose or aim.

The process of epistemological integration has two dimensions: a productive, scientific, creative dimension, and a consumptive, pedagogical, applied dimension.

As for the consumptive dimension of epistemological integration, it has to do with the use of the intellectual structures upon which integration rests in order to understand the phenomena or issues under investigation, identify the distinguishing elements of knowledge in its integrative framework, and facilitate the communication of this knowledge to others. The difference between the productive and the consumptive dimensions of epistemological integration might be likened to the difference between the physicist who discovers a given natural law or the technologist who develops an instrument or machine based on this law, and the technician who works in a factory in which this instrument or machine is used.

In order to clarify the role and importance of integration within the various fields of scientific activity, noted educator Ernest Boyer divided scientific activity into four phases. The first phase is that of *discovery*,

which consists in the epistemological efforts involved in research procedures in specific fields of knowledge. The second phase is that of *application*, namely, reflection on how to put the knowledge discovered to practical use. The third phase is that of *instruction*, or the communication of knowledge in such a way that it is bequeathed from one generation to the next. And the fourth phase is that of *integration*, where structure is integrated or combined with meaning. It is this final phase that gives the three earlier phases of scientific activity their true meaning and significance. Stressing the nature and importance of integration, Boyer held that it is only through integration that research becomes truly trustworthy.³

The Unity of Knowledge: A Practical Foundation for its Integration

The concept of epistemological integration is linked to the concept of the unity of knowledge, which constitutes the logical foundation for such integration. I will be devoting the present discussion to the concept of epistemological integration in particular, postponing the discussion of the various concepts connected with the unity of knowledge to another occasion. Nevertheless, the Islamic principle of divine oneness; i.e., *tawhīd*, will be present in discussions of both the unity of knowledge and epistemological integration.

The modern age has been highly successful in keeping its promise of expanding knowledge and progress in providing for life's external, material requirements. However, the price has been exorbitant. For modernity has left us with a frightening legacy of unprecedented problems on a global scale, problems which threaten the very future of humanity and of the planet we live on. Exponential growth in information and data has resulted in a mass of knowledge so vast that, in order for us to be able to cope with it, it has had to be divided up into separate fields and specializations, and the more our knowledge increases, the more it has to be divided and fragmented. As chemist Allen Utke points out, this phenomenon has given rise to educational systems and societies which are engrossed in a process of dividing and subdividing knowledge into a growing number of specializations and sub-specializations. Out of this process have emerged individuals with

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a reductionist view of the world who focus excessively on parts of the truth that are immediate and direct, while losing touch increasingly both with history and with the larger, more comprehensive picture of the cosmos. Hence, as we come to know more and more about fewer and fewer things, we know less and less about more and more things.⁴

We are, without a doubt, living through an extraordinary, perilous phase of history the end of which is difficult to predict. Some researchers are of the opinion that humanity is slipping into a new dark age, and that human society and civilization are in great danger. Indeed, we are living in an era in which, for the first time in history, the specter of the end of Planet Earth itself appears to be looming on the horizon. However, despite the dark picture some have painted of the state of humanity and the planet on which we live, Utke is optimistic about the possibility of entering a new phase of history, or post-modern era. Utke attempts to draw up a plan which, though admittedly imperfect, he believes will help pave the way for such an age. According to Utke, the new age of lights (which is how he refers to the post-modern age) will be accompanied by revolutions in which the forces of matter and mind intermingle to bring about radical changes in human behavior toward nature as well as, by necessity, changes in people's view of the world and psychological inclinations, which will differ significantly from those exhibited during the age of modernity. There will be a shift away from a shallow focus on present reality characterized by narrowness, irresponsibility, dogmatism and violence, and toward a more comprehensive, inclusive way of thinking about the Absolute Truth. The new age of lights, in Utke's view, will also be accompanied by a methodological revolution that moves away from the emphasis on the individual, be it the personal "I," the national "I," or the religious "I," and toward a re-emphasis on the human "we" as we move into the future.

Utke justifies his optimism based on the observation that in the early twentieth century, the old world and its reductionist methods began taking in larger and larger doses of what might be termed "cosmic unity consciousness." Unity consciousness has been spread, for example, through the Theory of Relativity and its applications, new understandings of the relationship between energy and matter,

Quantum theory, and Grand Unified Field Theory. Those who promote such consciousness stress the study of the various parts of reality together with the realization that in the final analysis, these parts are actually nothing but an illusion, since everything, ultimately, permeates everything else. The knowledge and information in our possession draw our attention away from the whole and toward the parts (from the one to the many). However, there is an ongoing recognition that the whole is greater than the sum of its parts.

This new science recognizes that definitive knowledge, complete understanding, and total certainty of the truth are ideals that will never be realized. In their place it offers a new truth, namely, that the universe is not in a simple, static, disconnected state that has no meaning, like some mindless machine, and that human beings did not appear in this universe by accident or mere chance. Rather, the universe appears to be cohesive, its parts connected to one another. It also appears to be growing in a conscious fashion, its structure and features integrated, while human beings appear to be a means of achieving the purpose for which the universe was created, in that the human mind appears to be the most complex entity known to us. One might venture the claim that the new science, through the powerful message it presents about the new reality, is heralding the dawn of the long-awaited new age, the post-modern age, in which the unity of knowledge can be realized.⁵

Some scholars' belief that sciences will ultimately be unified finds support in the conclusions reached by Muslim physicist Muhammad Abdus Salam, known for his work in the area of electroweak theory. This theory, on the basis of which Abdus Salam was awarded the Nobel Prize in Physics in 1979 together with two of his colleagues, is a unified mathematical and rational description of electromagnetism and the weak interaction, which was the most advanced theory that had been formulated up to that time on ways of unifying the fundamental forces of nature. The validity of this theory was confirmed in later years through experiments conducted in the laboratories of the European Organization for Nuclear Research (CERN) in Geneva, Switzerland in the particle accelerator known as the Super Proto Synchrotron, which led to the discovery of the W and Z gauge bosons. The electroweak theory continues to form an important part of the standard model of particle physics.⁶

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Models of Islamic Discourse on the Unity and Integration of Knowledge

Within the context of Islamic discourse relating to the unity of knowledge, many Muslim scholars in the past spoke of the need to preserve the unity of the sciences and of knowledge in general by virtue of the fact that they were all connected to a single source, that is, God Almighty. This connection was acknowledged regardless of whether knowledge took the form of revealed texts, or information that God had enabled human beings to acquire through research and investigation. Suffice it in this regard to note the efforts of al-Ghazālī, Ibn Rushd, and Ibn Taymiyyah.

In the modern era, by contrast, faced with the West's unprecedented scientific and industrial superiority, numerous Muslim intellectuals began falling under the influence of Western ideologies that raise a barrier between science and religion. In consequence, a large number of contemporary Muslims have taken it upon themselves to address the dangers involved in separating Islam from science and the need to reestablish the vital link between them based on the principle of divine unity.

The issue is related fundamentally to the integrative nature of the natural and biological sciences themselves. Ongoing progress in the realm of scientific knowledge and research in the philosophy of science have revealed the interdependence, complementarity and systematic nature of contemporary scientific knowledge. This, in turn, has revealed the need to activate what Ahmed Fouad Pasha has referred to as,

a universal, comprehensive view of the various phenomena of the universe and life. Such a view causes the apparent barriers among the various branches of knowledge to vanish in such a way that intermeshing, integrated sciences take the place of discrete, separate ones. In fact, all of them can be included within a single orderly structure... One of the most telling examples of the complementarity and interdependence of modern sciences is the emergence of Cybernetics, which is based on numerous fields of learning, including Mathematics, Logic, Mechanics, Physiology, and others... The twin features of complementarity and systematicity are significant because they confirm the fact that human knowledge progresses and evolves in a marvelous harmony toward more and more abstraction and generalization. Abstraction and generalization are features that characterize human

thought which is imbued with belief in the divine unity, and which one finds within the framework of Islamic life and doctrine.⁷

Similarly, Muzaffar Iqbal affirms the need to join the words “Islam” and “science” in such a way that we are speaking not only of a link between them, but about complete unification. The reason for this, in Iqbal’s view, is that it would make no sense for Islamic discourse to speak of two separate or independent paths to the truth. Even when there are varied ways of expressing the one truth or differing means of arriving at this truth, they will remain connected to one another via a central node with a unifying function.⁸

The late Isma‘il al Fārūqī, together with the Islamization of knowledge school that developed at the International Institute of Islamic Thought and a number of universities and research centers, held that the crisis being faced by the contemporary Muslim community results from the division that has been set up between the religious and secular educational systems. In al Fārūqī’s view, the Muslim community has difficulty benefiting from the contemporary sciences in their present form, whether the humanities, the social sciences, or even the natural sciences. The reason for this is that although these sciences all represent aspects of an integrated view of the truth, the world, and history, they are treated as though they were foreign to Islam. Hence, the solution to this crisis lies in unifying the traditional Islamic educational system and the contemporary secular educational system into a single system that combines the best of both. Such a combined system would develop the knowledge offered by the various educational systems by formulating it from an Islamic perspective, that is, by Islamizing it.⁹

Seeking to achieve the same cultural aim for the Muslim community but in terms that differ from those used by the Islamization of knowledge school, Ziauddin Sardar – together with a number of his associates in what has come to be known as the Ijmāliyyīn School¹⁰ – has added his voice to the discussion of the unity and integration of knowledge. According to the Ijmāliyyīn School, all sciences, including the natural sciences, are socially constructed and functional in nature; that is to say, they are tools and means of action, their value being determined by their practical usefulness. According to this

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school, the sciences arise out of specific assumptions about truth and humanity and the relationship between human beings and nature. Moreover, given the fact that every civilization constructs its own sciences, all modern sciences are, therefore, Western sciences. Consequently, it will be difficult to construct Islamic sciences anywhere but in an Islamic cultural environment by means of a radical construction process that establishes integrative ties among its various components.¹¹

There is, in addition, an Islamic discourse on the unity of knowledge based in spiritual experience. This discourse views knowledge from a traditional perspective, which was expressed by the civilizations of the East within a metaphysical framework based on principles derived from the timeless teachings of the divine revelation in its various forms. This being the case, the traditional sciences enjoy a sacredness derived from the sacredness of nature itself, which in turn derives its sacredness from the revelation due to its recognition of Nature as a composite of the signs of God. Hence, the knowledge human beings acquire about the world and the knowledge they receive from the Creator constitute a single unit. Even the methodologies of these sciences can trace their roots to a single source. Thus, the knowledge available to human thought through mystic (Sufi) philosophy opens up numerous possibilities because, being linked ultimately with God in His transcendence, it establishes a link among all the knowledge-related activities in which thought engages.¹²

This philosophical, Sufi discourse has been adopted by a group of contemporary scholars, foremost among whom are Seyyed Hossein Nasr, Syed Muhammad Naquib al-Attas, Mehdi Golshani, and their disciples in Malaysia, Iran, Turkey, and the United States of America. It is clear that this vision is based on meditative philosophy and, as such, goes beyond the ethical determinants of action in the universe to a metaphysic which sees nature as an entity with spiritual significance. Consequently, this philosophy holds that contemporary science, which lacks a sense of the sacred, is leading humanity to the brink of an abyss. In this respect it finds itself in agreement with many scholars who, though their thought arises out of an entirely different analytical philosophy, have similar expectations of the fate that awaits the human

race on Planet Earth in light of problems foreseen, unforeseen, and unacknowledged.

The Relationship Between the Classification of the Sciences and the Unity and Integration of Knowledge

Efforts to classify the sciences are relevant to the issue of the unity and integration of knowledge. Muslim scholars representing a variety of intellectual trends – among them philosophers, theologians, leading Sufi thinkers, jurists, historians, and others – have sought to discover the order that underlies the various fields of knowledge and the relationships among them.

The classification of the sciences is one of the essential keys to understanding the Islamic intellectual heritage. Muslim scholars' efforts in this field over the centuries may be viewed as attempts to elucidate various links among these sciences, since it is these links which form the criterion for classification. Classification tends naturally to focus either on elements of similarity and unity, or on elements of contrast and diversity, though in some cases there is a need to focus on both.

The notion of the classification of the sciences is rooted in ancient history. One ancient method of classification involves categorizing the sciences according to the criterion of abstraction in keeping with Aristotelian thought. This method of classification places the most abstract sciences at the top of the pyramid, considering them to be more significant than the practical sciences. The most important thing to be noted here is the attempt to separate the sciences by affirming their autonomy and their graded order of importance.

Although most Muslim scholars have been influenced by this method of classification, particularly those who adhere to the Aristotelian philosophical school, some of them have striven to ensure that their classification reflects the Islamic worldview and its requirements. We find, for example, al-Fārābī, Ibn Ḥazm, Ibn Khaldūn, Ibn al-Qayyim, and Tash Kubra Zadeh organized the sciences into a classificational structure that served educational purposes, and which thus reflected the realistic view of the sciences that had arisen within the Islamic environment. Given the number and variety of the sciences,

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Muslim scholars' efforts to classify them focused on features that were proper to the Islamic worldview. These features include, for example, logically based order, internal consistency, graded levels of importance, continuity on the level of content, complementary, interdependence, and a unified orientation toward the service of Islamic religious truth.¹³

There are important differences among the bases of classification employed by Muslim scholars and their respective epistemological schools. Al-Fārābī, for example, belonged to the Peripatetic (Aristotelian) School, al-Ghazālī represented the Scholastic and Sufi school of thought, while Quṭb al-Dīn al-Shīrāzī hailed from the Illuminist School. Nevertheless, they all agreed that the highest level of knowledge is the knowledge of God Almighty, and that human beings ought to strive to achieve other types of knowledge in the service of knowing God.¹⁴ Therefore, all other forms of knowledge should be interconnected, complementary, and organically linked to the knowledge of God. In the view of these scholars, the fact that all sciences originate from a single divine source is the foundation for the ultimate integration and unity of knowledge.

Second: THE PRINCIPLE OF GOD'S ONENESS AS THE FOUNDATION FOR EPISTEMOLOGICAL INTEGRATION

Muslim scholars agree unanimously that the oneness of God (*al-tawḥīd*) is the foundation of Islam and that which gives Islamic civilization its identity. Many non-Muslim scholars also acknowledge that the concept of the oneness of God in Islam is to be distinguished from its counterpart in the other monotheistic religions,¹⁵ both in its conceptualization of the one God, and in the implications of this conceptualization for the Creator's relationship to His creatures.

Ismaʿīl al Fārūqī's Vision of the Unity and Integration of Knowledge

Ismaʿīl al Fārūqī devoted an entire book to the subject of *al-tawḥīd*, or the oneness of God,¹⁶ in which he expounded the integrated nature of the monotheistic perspective and the way in which it brings together the theoretical-philosophical and the practical-applied dimensions of

culture and civilization. Al Fārūqī's treatment of the issues of the unity and complementarity of the various branches of knowledge is free of many of the complexities with which the Islamic heritage has been burdened in the name of Islamic philosophy and scholastic theology, and he made a powerful case for reforming Islamic thought and the contemporary Islamic approach to vital issues.

Together with other Muslim scholars, al Fārūqī viewed *al-tawḥīd* as an all-encompassing perspective on reality, the cosmos, time, place, human history, and human destiny. The concept of *al-tawḥīd* applies to the entire Islamic way of life. Islam does not divide the world into sacred and profane, nor does it classify values as “religious” vs. “secular.” Similarly, it makes no distinction between “men of religion” and “men of the world.” Seen from the Islamic perspective, these are artificial distinctions and classifications that belong historically to non-Islamic traditions.¹⁷

The concept of *al-tawḥīd* leaves its mark on all aspects of Islamic culture and civilization by establishing clearly defined links between them. In its grand inclusiveness, Islam brings about a reformulation of every element of its civilization in varying degrees of depth, from minor modifications in outward forms to radical changes in functions, since it is function which shapes essential relationships. When Muslims developed the science of *al-tawḥīd*, they combined within it the areas of logic, the theory of knowledge, metaphysics, and ethics.¹⁸

Islamic monotheism (*tawḥīd*) draws a crucial distinction between the transcendent Creator and the created universe. It is the will of the Creator which defines creatures' existence, their behavior, and their organic structure. The reality of God's oneness is manifested in the fact that the universe is founded upon orderly behavior. Such orderliness points to the unity of the authority that brought such order into being, namely, the one God, glory be to Him. If there were numerous deities in the universe, it would be thrown into disorder, because it would be incapable of answering to two masters at one and the same time. For this reason, affirmation of God's oneness is of vital importance in religion, since it plays a distinctive role in shaping human beings' beliefs in this life, and determining what recompense will be theirs in the life to come.

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Acknowledgment of God's unity – *al-tawhīd* – presupposes by necessity an acknowledgement of the unity of truth as well. Al Fārūqī explains how *al-tawhīd*, as a methodological principle requiring the unity of truth, is based on three subsidiary principles having to do with the nature of the sources from which human beings acquire knowledge. The first of these principles is the rejection of all that is inconsistent with the truth. The second is the disavowal of contradiction. And the third is openness to new evidence.¹⁹

The first of these three principles excludes falsehood, illusion, and conjecture from the realm of Islamic belief, while still allowing room for criticism and scrutiny. Anything that deviates from the truth or fails to conform to it in some degree is unacceptable in Islam, be it legislation, a personal or social ethical principle, or a way of understanding the world. This protects the Muslim from being swayed by mere opinion or whim. Any claim that is not accompanied by supporting evidence is mere conjecture, which can never replace the truth. Muslims are individuals who speak nothing but clear truth, and who accept nothing but the truth even if it goes against their desires and aspirations, or conflicts with their personal interests or the interests of those near and dear to them.

The second principle, which has to do with the absence of contradiction, represents the essence of rationalism, and without it there is no escape from doubt and uncertainty. If a contradiction cannot ultimately be resolved, this means there is no way of arriving at the truth. Contradictions may, of course, appear in a person's thinking and statements. There may also be contradictions in our superficial understanding of the relationship between revelation and reason. Islam denies the logical possibility of such contradictions when there is a true, complete understanding of revelation; it also presents an explanation of the way in which apparent contradictions can be eliminated.

In al Fārūqī's view, neither reason nor revelation holds sway over the other. If revelation were allowed to hold sway over reason, there would be no basis for distinguishing one text of the revelation from another, or between two different ideas presented by the revelation on a particular topic. Without allowing for the role of reason, it would be impossible to resolve the contradictions or inconsistencies that arise in

our understanding of the texts of the revelation. The various texts of the revelation are themselves characterized by internal consistency, and the correct understanding of them prevents the appearance of contradiction. However, this or that text of the revelation may appear to be inconsistent with reason; that is, it may appear to conflict with certain outcomes of rational investigation and understanding. When this happens, Islam teaches us that the contradiction that has appeared is not the end, and that we should rethink either our understanding of the revelation, the outcomes of our rational investigation, or both.

Although Islam rejects the possibility of an irresolvable contradiction between reason and revelation, the concept of *al-tawḥīd* – as an expression of the oneness of truth – encourages us to reexamine whatever appears to be a contradiction. The reason for this is that some dimension of reality may have eluded us so that, if we were to take this dimension into consideration, the apparent contradiction would be resolved. *Al-tawḥīd* requires seekers of truth to engage in another reading of the divine revelation when they sense that there is some logical contradiction in it, since this additional reading may remove the ambiguity and clarify meanings they have not been able to understand, thereby resolving the contradiction. Hence, rethinking one's reasoning or understanding may bring about harmony, not among the texts of the revelation themselves – since these texts are above being subjected to human judgment – but, rather, between the texts and human beings' understanding of them. This harmonization process brings our understanding of revelation into conformity with the data we have gathered and discovered through reason. Hence, the notion that there might be contradictions between revelation and reason is attractive only to those with weak minds. Muslims are behaving rationally when they insist on the unity of the two sources of knowledge, namely, revelation and reason.²⁰

On this point al-Fārūqī appears to be in agreement with Ibn Taymiyyah. Al-Fārūqī rejected the views of al-Rāzī, Ibn Rushd, and other like-minded Muslim philosophers and theologians who assumed the possibility of contradictions between revelation and reason, while viewing reason as the final authority and the means by which revelation is understood. Similarly, he parted ways with al-Ghazālī, who

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agreed with the philosophers and theologians on the possibility of contradictions between revelation and reason while viewing revelation, not reason, as the final authority.

The third principle of *al-tawhīd* as an expression of the oneness of truth is that of openness to new or conflicting evidence or data. This principle protects the Muslim from the need to join liberal, unbelieving schools of thought; at the same time, it protects him or her from extremism, or a conservatism so strict that it leads to rigidity and stagnation. Adoption of this third principle of *al-tawhīd* gives rise to intellectual humility. Such humility leads us to say, “God knows best” when confronted with conflicting evidence or apparent contradictions between revelation and reason, since we know that the truth is too great to be fully comprehended or fathomed by human beings.

Moreover, just as *al-tawhīd* serves to confirm the absolute oneness of God Almighty, it likewise confirms the unity of sources of truth. God is the Creator of the natural world from which human beings derive knowledge:

He it is who has made the sun a [source of] radiant light and the moon a light [reflected], and has determined for it phases so that you might know how to compute the years and to measure [time]. None of this has God created without [an inner] truth. Clearly does He spell out these messages unto people of [innate] knowledge: for, verily, in the alternating of night and day, and in all that God has created in the heavens and on earth there are messages indeed for people who are conscious of Him! (*Sūrah Yūnus*, 10: 5-6)

The object of knowledge consists of the things and events of Nature, which are creations of God. It is a certainty that God Almighty knows these things and events, and it is equally certain that God is the source of revelation. Moreover, God gives human beings something of His vast, all-encompassing, perfect knowledge.

Al-tawhīd invites human beings to draw connections between God as Creator and the pursuit of knowledge in its various spheres. The reason for this is that when human beings perceive the work of God in all events and things, they are observing the work of divine creation. When they observe the action of God in Nature, they are engaging in

the natural sciences, since the divine creation in Nature is none other than the patterns and laws that God has deposited in the natural realm. Similarly, when human beings perceive the work of divine creation in themselves or their societies, they are engaging in the human and social sciences. If, as a result of human striving and searching, the cosmos reveals the operation of orderly patterns and laws as manifestations of God's will, then, from the Muslim's perspective, the cosmos is a living theatre which God created by His action and command.²¹

*Seyyed Hossein Nasr's Vision of the Unity and
Integration of Knowledge*

Seyyed Hossein Nasr and a number of his disciples offer another way of thinking about the implications of *al-tawhīd* for the unity and integration of knowledge. Nasr agrees with other Muslim scholars on the importance of the principle of *al-tawhīd*, the hierarchical ordering of the sciences, and the view of *al-tawhīd* as the highest form of knowledge and the final goal of all the Muslim's intellectual strivings. By contrast, however, Nasr focuses primarily on the natural sciences; he also placed great importance on philosophy and traditional Islamic metaphysics, which he and other like-minded scholars view as the entry point for understanding the relationship between scientific and religious knowledge. Consequently, they use the same metaphysical terminology that was current among Muslim thinkers such as al-Rāzī, Ibn Sīnā, al-Shīrāzī, Ikhwān al-Ṣafā, and others.

One of these terms is cosmology, or cosmological knowledge, which is employed as a point of entry to the study of nature. Cosmology is a branch of metaphysics in which the macrocosm, or the greater cosmos, is compared to the microcosm, or the lesser, human "cosmos." Within the context of cosmology, to observe Nature is to observe the action of the Creator, and the legitimacy of the ongoing pursuit of the natural sciences depends on the degree to which these sciences reveal the overall unity, connection, interdependence, and complementarity that characterize the divine creation. Hence, scientific knowledge that conforms to the spirit of Islam is knowledge which derives its legitimacy from the fundamental doctrine of Islam, that is, *al-tawhīd* in all its

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varying senses, and which strives ultimately to integrate particulars within a single comprehensive whole. There may be many different explanations, interpretations, and levels of thinking. However, what remains is the principle according to which the created world consists of the unity of unified entities, whereas God the Creator alone enjoys what Nasr terms “the unity of the Unique.”²²

The organic link between scientific knowledge and the knowledge of God’s oneness means that scientific knowledge is encompassed and integrated within the knowledge of God’s oneness, because the divine revelation is the source of metaphysical knowledge of the diverse world with which the sciences deal. However, the conceptual tools for integration need to be derived from cosmological knowledge. This cosmological knowledge is capable of providing tools for conceptual integration, because the aim of integration is to provide the kind of scientific knowledge that sets forth the complementarity of all things and the way in which the levels of the hierarchy or order in the universe are linked to each other and to the spiritual realm. Consequently, it provides knowledge that allows for the integration of multiple and varied entities into a single unit.²³

Osman Bakar’s Vision of the Unity and Integration of Knowledge

In an approach similar to Seyyed Hossein Nasr’s, Osman Bakar uses the term “cosmological knowledge.” This cosmological knowledge is spiritual in nature. The laws that govern the various systems within creation are not all equally general and comprehensive. Rather, there is a hierarchical order to this generality and comprehensiveness. Biological laws, for example, are higher than chemical and physical laws, because biological laws have to do with living beings, which possess an existential reality that is higher than that possessed by other entities. However, these same biological laws are subject to a higher set of universal laws of a spiritual nature. When attempts are made to bring about an objective unification of known laws in the realms of physics and biology, we may reach a point beyond which we have no choice but to take into account laws that govern supernatural orders. In other words, we must recognize that natural laws are of limited comprehensiveness and generality.

The natural and mathematical sciences are limited sciences having to do with specific spheres of truth, whereas the higher truth of *al-tawhīd* is a metaphysical science having to do with realities that lie beyond human perception.

The science of metaphysics is the most general of all the sciences, because it concerns itself with the higher truth that encompasses all other truths. Cosmological knowledge, which concerns itself with the structure and qualitative content of the cosmos, lies somewhere between the higher knowledge of *al-tawhīd* and the particular sciences. In the traditional Islamic sciences, cosmology was classified as part of metaphysics; this is what we find, for example, in the enumeration provided by al-Fārābī, and it was from cosmology that the other particular sciences were derived. Cosmological knowledge thus constitutes the conceptual framework for the unity of the material and spiritual sciences.²⁴

In keeping with the same approach, Osman Bakar employs the terms “spiritual knowledge” and “universal soul.” The term “spiritual knowledge” refers to the knowledge of God and His oneness or unity. This knowledge does not necessarily have to do with the divine essence, which we are forbidden to think about. Rather, it has to do with the effects and actions of the Creator throughout the created universe. According to Bakar, the Muslim’s knowledge of the Creator is the knowledge of the universe in its capacity as one effect of the Creator’s action. Awareness of the relationship between God the Creator and the created cosmos, or between the principle of divinity and its manifestations in the cosmos, is the primary foundation for the unity of scientific and spiritual knowledge.

An understanding of this relationship requires us to go back to the fundamental source of knowledge in Islam, that is, revelation, which consists of the Qur’an and the Prophetic Sunnah. The Muslim looks upon the Qur’an as the springhead of both intellectual and spiritual energy. As such, the Qur’an is viewed as the springhead of all knowledge and all sciences, not because it contains the knowledge itself but, rather, because it inspires the Muslim to develop a distinctive vision of the unity among the various spheres of knowledge. The notion of this unity arises out of an awareness of the unity of the Divine and its applications to the various spheres of human knowledge. For, although

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human beings acquire knowledge from various sources and in a variety of ways, all types of knowledge derive ultimately from God the All-Knowing. The Qur'anic vision affirms that our knowledge of material and spiritual realities is possible because God has given us the necessary capabilities to possess such knowledge.²⁵

Among Muslim scholars, cosmology requires that one relate to the natural world in a manner that is connected to the higher orders of truth. When studying the natural world, including the biological sciences, Muslim scholars affirm the relationship between this world and spiritual entities that lie beyond human perception. Hence, they recognize that the question of the origin of life on earth cannot be solved based on the evidence of natural entities alone, because life is not simply a material, natural form of existence. Rather, it is a vital capacity or force that has penetrated the world of material things. The molecular physiological activities associated with life's various forms are not themselves the source of life. Rather, they are simply manifestations of life on the natural level. The Islamic cosmological principle which is considered the basis for deciphering the mystery of life is the notion of "the universal soul." This universal soul is the soul or spirit of the natural order. As such, the universal soul is to the natural order what your soul or spirit is to your body.

It is this universal spirit which gives the entire cosmos its vital energy, an energy that we observe in the life of plants and animals. This universal spirit which exists in God's creatures, its relationship to human beings' knowledge of the universe's functions, capacities and distinguishing features, and the ways in which these relate to the natural order are essential for the integration of the biological sciences. Moreover, as will be clear from the foregoing, we perceive the existence of this spirit based on our belief in *al-tawhīd*, or the oneness of God.

Despite the importance of developing cosmology and its link to the unity of knowledge, it is not necessary to abandon the empirical method and the modern tools of scientific research and investigation that have proved so successful in the quantitative study of nature. However, we do need to make radical changes in our orientations toward reality and knowledge. Acceptance of the notion of cosmology has a significant impact on research methodology, since those committed to

the scientific method have to give up the claim that it is the only way to know things and acknowledge the existence of other paths to knowledge which are equally valid.²⁶

Third: EPISTEMOLOGICAL INTEGRATION IN
THE ISLAMIC WORLDVIEW

Our discussion of epistemological integration begins with the Islamic worldview, which has enabled the Muslim mind to develop a sound understanding of the universe, life, and human beings.

“Worldview” is:

- a modern philosophical term referring to an all-inclusive view of the world that takes all parts, elements, components and systems into account.
- a vision of the true nature of things within the broadest possible framework. Such a vision consists of authoritative rules and frameworks for thought and action within the society’s overall value system.
- the lense through which the human mind perceives the realities of the universe, life, and human beings.
- a set of answers to the existential, epistemological, and value-related questions that arise in relation to these realities and the relationships among them.

The human mind acts instinctively to distinguish varied, multiple and separate entities from each other based on the features and traits that are proper to each of them. It also perceives these entities as belonging to a category or set which represents a larger unit. Such entities are located at specific time-place coordinates and there are definable relationships between them. Features and traits are also perceived by the human mind in relation to patterns of human behavior, social issues, religious values, and the like.

Any behavior or activity in which an individual engages or which prevails in this or that community within a society will be understood in light of an overall worldview. In other words, the image of existence reflected in our minds has a direct impact on our actions, our social

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conduct, and our individual and communal lives. In short, every one of us lives in accordance with his view of the cosmos – his worldview.²⁷

An Islamic worldview is an expression of the overall belief-based conceptualization embodied in Islamic doctrine. This conceptualization offers a comprehensive explanation of existence. It also gives rise to individuals' concrete way of life and the rules that govern their behavior in light of their understanding of their place in the universe and the purpose of their existence.²⁸

Abu Bakr Muhammad Ahmad's Study on Epistemological Integration and its Applications to University Curricula

One of the most comprehensive treatments of the subject of epistemological integration is a detailed study entitled, "Epistemological Integration and Its Applications to University Curricula." The study was written by Abu Bakr Muhammad Ahmad Ibrahim at International Islamic University of Malaysia (IIUM).²⁹ The researcher relied on a critical analysis of numerous writings of direct or indirect relevance to the concept of epistemological integration and related concepts, particularly the concept of the Islamization of knowledge. The study includes interviews conducted by the author with a number of researchers and thinkers. These are followed by an overview of the academic programs and pedagogical practices at IIUM's Faculty of Islamic Revealed Knowledge and Human Sciences, which has adopted and applied the concept of epistemological integration. On the basis of his research, the author concludes that epistemological integration is closely linked with the Islamization of knowledge. If the Islamization of knowledge can be properly described as a vision, then epistemological integration can be described as a feature that marks the educational process at academic institutions that have adopted this vision.³⁰

As for the vision itself, it is, in actuality, a worldview that calls for an intellectual and cultural reform enterprise from an Islamic perspective. This enterprise involves three steps. The first step is to reexamine the sources of Islam in light of their governing values and overall aims, and to critique the legacy handed down through these sources and founded upon these values and aims. The second step is to engage positively

with contemporary human knowledge as it relates to innate human tendencies, patterns, and dispositions, while subjecting this input to a critical analysis that will free it from philosophical accretions that are inconsistent with the facts at hand. These two initial steps are analytical and deconstructive in nature. As for the third step, which is constructive and creative in nature, it is to reformulate current knowledge within the Islamic worldview based on the integration of the guidance provided by divine revelation, the patterns and laws of nature, and human beings' attempts to understand the universe in its natural, social and psychological dimensions. Taken together, these three steps can help bring individual Muslims and the Muslim community as a whole out of the state of backwardness in which they find themselves. In fact, they promise to bring them to a place where they can make distinctive contributions to the direction being taken by human culture and civilization.

In this sense, epistemological integration is not merely an epistemological process but, in addition, a psychological and educational process whose aim is to liberate the Muslim mind, nurture the Muslim psyche, and motivate Muslims to be accomplish, create and reform.³¹

The Islamic worldview calls for an integrated, three-step intellectual enterprise for the purpose of reform and cultural advancement.

Worldview in the Thought of AbdulHamid AbuSulayman

AbdulHamid AbuSulayman has published a set of works whose aim is to analyze the crisis in the Muslim mind, will and psyche, and to propose needed measures for dealing with these crises. AbuSulayman has also published a book on the Qur'anic cultural worldview, a worldview which he formulated in the process of completing his earlier writings. The book clarifies the monotheistic, integrational dimension of the Islamic worldview, which AbuSulayman describes as being a systematic, scientific, and comprehensive vision of love and goodness that puts resources to the best, most constructive possible use. As such, this vision provides the foundation for releasing Muslims' potentials and molding their characters, psyches and instincts in keeping with the

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Qur'anic message via the forces of love, goodwill, conscience, reason and knowledge. When guided by sound doctrine and sincere faith and armed with the Qur'anic vision, Muslims can begin to flesh out these realities in society and build a constructive, spiritually-minded, well-intentioned human civilization.³²

The Muslim mind has been able to develop a clear, sound understanding of the universe, life, and human beings via a comprehensive Islamic worldview based on a careful, reflective reading of two 'books.' The first of these 'books', which is perceived through the physical senses, is the universe with the things, events, phenomena and interrelationships that human beings have put to use in their capacity as God's *khalifah*³³ (vicegerents) on earth. The second 'book', which exists in the form of a written revelation, is the Qur'an with its guidance, knowledge, wisdom, and decrees. In Islam's early days Muslims 'read' the universe in its natural, social and psychological dimensions with both their minds and their physical senses, introducing into this reading both the world of human experience and the world beyond human perception. They thus employed their knowledge of the universe to construct the foundations of a rightly guided human civilization that towered above both those civilizations which had preceded it and those that came after it. In addition, they engaged in an insightful, careful reading of the divine revelation in the form of both the Qur'an and the Prophetic Sunnah.

Based on these "two inseparable, thoughtful readings,"³⁴ epistemological integration has been achieved by combining the various aspects of the material universe (things, events, and phenomena), the social universe (laws and patterns of change, equilibrium through struggle and alternation), and the psychological universe (right guidance, depravity, faith, culture, and unbelief). This process has likewise involved combining the Qur'anic revelation, the Prophetic Sunnah, thoughtful consideration, the tools of concrete observation, and interpretation. In other words, it has involved integrating human, sense-based reception of both the physical universe and the written revelation with what we receive from the world beyond the senses relating to the origin and evolution of the universe through our study of divine revelation with its various reports and narratives.

As a result of this combination of the two ‘readings’ referred to above, the Muslim community was able to play the roles of pioneer, witness, benefactor, and leader for a period of time. Eventually, however, hearts were hardened, and the Muslim community imported the battle between reason and revelation from other nations and communities which only knew how to read the superficial phenomena of the life of this world. As a consequence, Muslims’ reading of the world around them changed: their vision was blurred, their minds were dulled, their perception deteriorated, and thus began their regression.³⁵

It was the Qur’anic worldview that gave birth to the mindset of the Prophet’s Companions, may God be pleased with them, and the Qur’anic foundations of their cultural achievement contributed immeasurably to the renewal of human civilization by expanding and elevating human beings’ rule-governed reason and moral awareness. The result was the beginning of a new era in which the laws of the universe were put to practical, creative uses, and efforts were made to guide the course of human civilization in keeping with human beings’ obligation to adhere to moral and spiritual principles.³⁶ This achievement was possible by clarity of vision, integration of the Islamic sources of knowledge (revelation, human nature, and the laws, patterns and facts of the universe), and adherence to the criterion of objective, orderly scientific reasoning. There is no benefit to be gained from atomistic, haphazard efforts which fail to perceive the system underlying Islamic civilization and the laws that govern its interaction with its surroundings. Yet it is precisely this kind of intellectual and scientific lack of awareness that has thwarted reformers’ efforts, numerous and protracted though they have been, to revive the Muslim community.

The Islamic vision for human civilization arises out of the notion of God’s absolute unity. Similarly, it is the principle of *al-tawhīd* that gives rise to the Qur’anic vision of the unified, integrated nature of the universe, whose structure and components constitute unity within integrated diversity, and integrated diversity in unity.³⁷ The Islamic worldview employs a uniquely Qur’anic, monotheistic approach to epistemological integration. It begins with the oneness of God the Creator, the oneness of the created universe, the oneness of the human being who has been appointed God’s steward on earth, and the

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oneness of the divine gift given to human beings through God's teaching Adam the names of all things (see *sūrah al-Baqarah* 2:31), then continuing to provide human beings with divine revelation to guide them by means of the written word:

O children of Adam! Indeed, We have bestowed upon you from on high [the knowledge of making] garments to cover your nakedness, and as a thing of beauty: but the garment of God-consciousness is the best of all. Herein lies a message from God, so that man might take it to heart. O children of Adam! Do not allow Satan to seduce you in the same way as he caused your ancestors to be driven out of the garden: he deprived them of their garment of [God-consciousness] in order to make them aware of their nakedness. Verily, he and his tribe are lying in wait for you where you cannot perceive them! Verily, We have placed [all manner of] satanic forces near unto those who do not [truly] believe. (*Sūrah al-A'raf* 7:26-27)

The revelation goes on to remind us of the lesson to be learned from Cain's slaying of his brother Abel, saying, "Thereupon God sent forth a raven which scratched the earth, to show him how he might conceal the nakedness of his brother's body. [And Cain] cried out, 'Oh, woe is me! Am I then too weak to do what this raven did, and to conceal the nakedness of my brother's body?' – and was thereupon smitten with remorse" (*sūrah al-Mā'idah* 5:31).

The monotheistic approach involves acknowledging the integration and interdependence that exist between the divine revelation embodied in Nature, and that embodied in the written word. In this way it does away with the problems associated with the correspondence between reason and revelation. Furthermore, the monotheistic approach involves integrating the sciences of revelation and the acquired sciences having to do with the universe in its natural, social and psychological dimensions. These latter sciences are necessary for human (*khilāfah*) vicegerency on earth, the proper exercise of authority over the natural world, and human development and progress. The use of this approach in efforts to achieve epistemological integration tends to foster moderation in all things, since there is no sense of opposition between the various aspects of existence: individual and community, matter and spirit, this world and the world to come, self and other, rights and duties, responsibility and reward or punishment.

The various members of the human body are integrated in performing their respective functions; however, the limbs are not as important as the heart or the brain.³⁸ Similarly, the various sciences can be integrated without all of them being on the same plane in their relationship to the truth and, therefore, of the same importance or priority.

Although God Almighty is the ultimate source of knowledge, He has made knowledge available to human beings through two sources: the written revelation and the created universe, and has provided human beings with two means for acquiring knowledge: reason and sensory perception. Reason operates when we seek to understand these two sources and put them to use in the service of human vicegerency (*khilāfah*) on earth. Similarly, sensory perception comes into play when we use our senses to observe and experiment on the things, events, and phenomena of the universe, or to arrive at the meanings of the texts of revelation as they apply to human experience.³⁹

The monotheistic worldview continuously links the various spheres of knowledge about which the Qur'an speaks. This link is so consistent, in fact, that the boundaries between these spheres nearly disappear, as do the boundaries between the Muslim's various practical concerns. The Qur'anic texts connect this earthly life with the life to come, the world beyond sense perception with the world of sense perception, and so on. Even more important, however, is the way in which they affirm the unity and complementarity of the sources and aims of knowledge.

Perhaps the most significant indication of this unity and complementarity is the Qur'an's use of the word "sign" (*āyah*) to refer not only to the written words in the Qur'anic text, but, in addition, to the concrete phenomena we observe in the physical, social, and psychological realms. We read: "And on earth there are signs (*āyāt*) [of God's existence, visible] to all who are endowed with inner certainty, just as [there are signs thereof] within your own selves: can you not, then, see?" (*sūrah al-Dhāriyāt* 51:20-21). When the Qur'an invites us to go about the Earth and investigate the beginnings of creation, it is as though God Almighty were linking the story of the creation of humankind as it is narrated in the verses of the Holy Book with what we find in fossils, for example, where we see the traces of life engraved in stone or buried

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beneath the soil. When it invites us to reflect on the fates of the peoples, nations and civilizations that went before us so as to learn from the past, we realize that although the guidance the Qur'an wants us to obtain is a gift of grace and mercy from God, we can also acquire it, in part, through the effort we expend in our study of history, archeology, anthropology, comparative religion, sociology, and so on. Similarly, when the Qur'an urges us to examine God's signs on the horizons and within ourselves – through the cosmological and psychological sciences – it is affirming the complementarity that exists between these sciences and the study of divine revelation.

The concept of integration is found in the writings of al-Rāzī, Ibn Rūshd, al-Ghazālī, and Ibn Taymiyyah.

Ibn Rūshd repeatedly affirmed this complementarity. He stated, “Existent entities point to the Maker through our knowledge of their workmanship, and the more complete our knowledge of their workmanship, the more complete will be our knowledge of the Maker.” He went on to say:

The divinely revealed law commends the act of reflecting on existing entities and urges us to engage in such reflection. Hence, it is clear that according to the divinely revealed law, this pursuit is, if not obligatory, then at least commendable. The fact that the law urges us to give reasoned consideration to existing entities and requires us to gain knowledge of them in this way is made clear by numerous verses in the Book of God, may He be blessed and exalted. We read, for example, ‘...Learn a lesson, then, O you who are endowed with insight!’ (*sūrah al-Hashr* 59:2), and ‘Have they, then, never considered [God’s] mighty dominion over the heavens and the earth, and all the things that God has created...?’ (*sūrah al-A‘rāf* 7:185). Such passages urge us explicitly to give thought to the created universe...Therefore, when those who believe in and seek to obey the divinely revealed law consider existing entities, they should first become familiar with the specific objects [before them], because these objects are the means by which such consideration can take place, just as instruments are the means by which work can be accomplished....”⁴⁰

The Arabic word *āyah* is used in the Qur'an to refer to both a verse of the Qur'anic text, and to a manifestation or sign of God's presence and power in the realms of nature, society and the life of the psyche.

Abū Ḥāmid al-Ghazālī also treated the question of the structural unity of knowledge. According to al-Ghazālī, the Qur'anic verses which speak about the stars can only be understood with help from astronomy, the verses that have to do with health can only be understood based on the study of medicine, and so on. Al-Ghazālī wrote:

... These sciences, both those we have enumerated and those we have not enumerated, are encompassed by the Qur'an. Rather, all of them have been dipped, as it were, out of a single sea – one of the many seas belonging to God Almighty – namely, the sea of actions. One of God's actions, for example, is that of [bringing about] healing and illness.... This action can only be recognized by those who have a perfect knowledge of medicine... Another of His actions is the determination of ways in which one can achieve knowledge about the sun, the moon, and their stations as God has numbered them... no one but those who know the make-up of the heavens and the earth can perceive the true nature of the sun and the moon in keeping with their divine reckoning, nor their eclipses, nor how the night gives way to the day, nor how one of these two celestial bodies rotates around the other. [And the knowledge of these things] is a science unto itself.⁴¹

Hence, although al-Ghazālī and Ibn Rushd differed on the subject of epistemology, they agreed on the need for the integration of knowledge, with al-Ghazālī seeing such integration in the structure of knowledge itself (integrality), and Ibn Rushd seeing it in the various sciences' need for one another (complementarity).

In a specialized work spanning eleven volumes, Ibn Taymiyyah presented an exhaustive discussion of the sciences human reason has generated, be they philosophical or natural, in comparison with the texts of divine revelation. Ibn Taymiyyah was of the view that there cannot be any contradiction between the two types of sciences. Rather, that which is truly rational will never conflict with the proper understanding of divine revelation. Ibn Taymiyyah stated:

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I have reflected on this in the context of what people generally disagree about, and I have found that the things that conflict with explicit texts properly understood are nothing but sophisms whose invalidity can be easily recognized through reason. In fact, reason confirms the validity of the opposing claims which are in agreement with the divinely revealed law.⁴²

Fourth: DANGERS AND OBSTACLES ALONG THE PATH TO EPISTEMOLOGICAL INTEGRATION

Human beings were created with an urgent, ongoing need to classify things, organize them into groups, analyze them into their component parts, recombine the parts, etc. Perhaps it is this need that has led to the emergence of the various epistemological fields and their branches.

Notwithstanding the efforts of scholars who are working along and across the boundaries of existing specializations and affirming the commonalities among the sciences, most of the scientific and technological discoveries made over the past several decades have come about thanks to the efforts of specialized scientists working in their respective fields. Scholars with narrow specializations will continue to make significant scientific accomplishments, and the vast majority of scholars – young ones among them in particular – will strive to prove themselves through specialized work. Such scholars may feel that working in the areas of integration and unification would come at the expense of opportunities for competition and academic excellence, which would threaten their futures.

This kind of fear is reinforced when efforts to address problems relating to over-specialization and the resultant atomization of knowledge result in the emergence of personalities with a distressingly superficial understanding of things. In such situations, the results of epistemological integration are not encouraging; in fact, nothing is a greater hindrance to progress than the “jack of all trades, master of none” who chatters constantly about generalities in this field or that, but lacks the ability to delve deeply into any of them.⁴³

There is a danger that, under pressure to find evidence supporting claims of unity and complementarity, those who support epistemological integration may search for links among the sciences or relationships

among the data that have no real existence. Such efforts may backfire or produce futile or laughable results. At the same time, some studies may have the appearance of methodological rigor, when in fact they are filled with specialized jargon that conceals their superficiality and incoherence. However, an even greater danger lies in the natural human tendency to find what one is looking for, or what one is expecting to find. This tendency can lead a researcher unknowingly into error, thereby undermining the external validity of his research design.

It is difficult to find scholars whose academic research models reflect a vision of the unity and complementarity of the sciences, a fact which hinders efforts to promote work based on such a vision and to expand the range of its applications. This difficulty emerges especially in the search for instructors who are skilled at teaching their particular specializations using interdisciplinary or cross-disciplinary methodologies.

One of the most serious obstacles facing new ideas and their applicability is the tendency to misunderstand those who advocate these ideas, or to misrepresent or misapply the ideas themselves. The sincere desire to adopt and promote an idea is not enough to persuade others of it, or to create the circumstances conducive to its acceptance and application. Rather, the idea also needs to be correctly understood and represented. One common misunderstanding of epistemological integration is the belief that it can be achieved simply by establishing a university degree program in which students are able to take subjects from a variety of areas – subjects relating to Islamic law, for example, alongside sociology and other courses relating to social issues – in the hope that integration will take place on the level of the student's intellectual orientation. A textbook might contain contemporary formulations of its subject matter based on assumptions that are inconsistent with religious thought. Alternatively, it might present religious texts thought to be relevant to the specialized material, or the contributions of Muslim scholars and thinkers through history on the subject being taught. However, such a mishmash of information may not involve any sort of epistemological integration. Rather, it may be nothing but a forced combination that distorts the subject under study, and which may produce outcomes that are at odds with the aims of epistemological integration.

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Once universities have made the decision to teach the natural sciences, the social sciences and the humanities with a view to highlighting their unity and complementarity, they will need to redesign their curricula in such a way that it serves the aims of epistemological integration. The curriculum adopted should, for example, train specialists in scientific fields to make wise decisions when researching issues relating to the social sciences and designing their applications in industry, business and services. Similarly, it should equip specialists in the humanities and the social sciences to make wise choices and relate in a discerning fashion to issues of relevance to the natural sciences.

At the same time, specializations and epistemological fields related to the nature of human thought, the history of science, cultural assumptions, the nature of values, ethics, esthetics, patterns of environmental and human development, comparative religion, and other fields that raise vital existential questions (about our origin as human beings, our evolution, and our destiny) also call for receive greater interest and attention in curriculum design.

Those responsible for university education need to help students understand that graduates who will be working in various professions in the coming generations of the twenty-first century will need more than just copious amounts of information. Information has become readily accessible, and will become still more accessible with the increasing globalization of higher education. When this occurs, there will be a need for new types of skill, competence, and wisdom. Specifically, what will be needed is the ability to combine and integrate the right information at the right time, to think critically about the information at one's disposal, to weigh the available options and alternatives, and to make prudent choices. After all, in the words of one modern thinker, "We are drowning in information, while starving for wisdom."⁴⁴

The task of unifying the human, social and natural sciences is a decidedly difficult one. But how many such difficult tasks have already been accomplished? Open-heart surgery, spaceship design, and human gene mapping have all become routine procedures despite the fact that they are extremely demanding in terms of the nature of the knowledge and skill they involve, the enormity of the concerted efforts required to

execute them, and the exorbitant sums of money they consume. All of these things have been made possible because they were backed by a resolute will and competent scientists devoted wholeheartedly to their achievement.

CONCLUSION

Many of those who have discussed the unity of knowledge (or the unity of the sciences), be they natural scientists or specialists in philosophy, the history of science, or the history of religion, view this unity in a reductionist fashion such that all types of knowledge and science are subsumed ultimately under a single broad discipline: the natural sciences, for example, or the religious sciences. This reduction takes place by interpreting the facts and theories of the sciences, or by identifying the final authority for this interpretation, or by arguing for the unity of the source from which these sciences spring.

The belief in this type of unity generally rests upon an all-inclusive worldview. The worldviews adopted by these scholars and scientists have some elements in common, while differing with respect to other elements depending on the nature of the metaphysical authority or point of reference to which the writers ascribe. However, the implications of affirming the unity or complementarity of the sciences are not clearly evident in applied scientific writings. Rather, they are latent and concealed within key phrases that point to them indirectly, and can only be derived through a profound and detailed analysis of the philosophical assumptions underlying the text. ♦

In view of the variety of concepts relating to the unity and complementarity of the sciences and their association with specific metaphysical points of reference, these concepts are frequently accompanied by a certain degree of confusion or ambiguity, as a result of which they fail to achieve significant practical outcomes. The term “complementarity” may convey a clearer meaning than that of “unity,” especially if by “complementarity” we mean that a specific science needs to be completed or complemented by one or more other sciences in order to progress and develop, or that in order to understand a particular science, we need to be familiar with other sciences as well.

Concepts of Relevance to Epistemological Integration

The concept also remains an open one to which new dimensions can be added whenever the need arises. So, for example, it is easy to see that the efforts of scientists in a particular specialization need to be complemented by the efforts of other scientists within the same specialization in order for them to resolve a particular scientific problem or achieve some specific concrete goal. In this situation, integration consists in bringing together individual scholars' efforts to construct a shared vision that is deeper, broader, and more objective. Such a process can help to achieve concrete results and facilitate the scientific and academic community's acceptance and recognition of the notion of epistemological integration. This phenomenon is illustrated in the case of Nobel Laureate Muhammad Abdus Salam, who was awarded the 1979 Nobel prize in Physics. In his acceptance speech, Abdus Salam mentioned the names of more than fifty other scientists who had been involved in the specialized research on the basis of which he had received the prize, noting that these scientists had built on each other's work and engaged in ongoing, frank dialogue. Some of them had tested out others' hypotheses experimentally before Abdus Salam and his colleagues arrived at their theory on the unification of fundamental forces.⁴⁵

Epistemological integration may mean combining the efforts of scholars from various specializations in order to deal with specific problems, particularly those relating to major strategic issues and contemporary scientific and technological development in areas such as medicine and space exploration. A fundamental aspect of this type of integration is managing the scientific enterprise and organizing the roles of those taking part in it so as to provide the information needed during each phase of the project, cope with emergencies, and deal with new developments. The history of modern science provides numerous examples of the importance of integrating the efforts of scholars with a variety of scientific, technical, and administrative specializations toward carrying out specific and highly complex projects. One such example is the Manhattan Project,⁴⁶ which led to the manufacture of the first atom bomb in the United States in 1946. Another is the goal of sending a man to the moon, which President John F. Kennedy committed himself to achieving before the end of the 1960's, and which was in fact achieved in 1969.⁴⁷

Still other forms of integration entail combining the efforts of scholars from different generations such that each generation builds on the experience of the generation that went before it. In fact, it is difficult to imagine how any given generation could have achieved what it achieved had it not been for the achievements of the preceding generation. The same goes for integration of the efforts of different peoples and nations, as history tells us that virtually every nation's civilization has been the outcome of interaction with, absorption of, and cultural borrowing from, other nations, both its contemporaries and its predecessors. In this connection Ibn Rushd holds that although the Greeks were pagans, this should not prevent us from making use of the scientific facts they discovered or the conclusions they reached, since otherwise we would end up reinventing the wheel, so to speak. Rather, we should begin where others have left off. It would not be easy for a single individual, generation or nation to obtain singlehandedly everything necessary to construct a human civilization. In the words of Ibn Rushd, "It would be difficult, in fact, impossible, for a single person to obtain on his own everything he needs in this respect."⁴⁸

Lastly, it should be noted that distinguishing between the unity and complementarity of the sciences does not require us to affirm one feature in order to negate another. Affirming the unity of the sciences is not to deny their complementarity, just as affirming the complementarity of the sciences is not to deny their unity. Rather, the use of one or the other of these two terms is a matter of approach. When we affirm the unity of the sciences we are describing the relationship among them on the ontological level; this is the metaphysical, theoretical approach. When, by contrast, we affirm the complementarity of the sciences, we are describing the relationship among them on the epistemological level; this is the practical, educational approach.

The purpose of this chapter has been to highlight the value of epistemological integration from a monotheistic (*tawhīdi*), Islamic perspective and the place of such integration in the Islamic approach to thought, research, and behavior. It is this approach, or methodology, which will occupy us in detail in the chapters that follow.