

# Reflections into the Spirit of the Islamic Corpus of Knowledge and the Rise of the New Science

*Mahmoud Dhaouadi*

There is no question that contemporary western civilization has been dominant in the field of science since the Renaissance. Western scientific superiority is not limited to specific scientific disciplines, but is rather an overall scientific domination covering both the so-called exact and the human-social sciences. Western science is the primary reference for specialists in such areas as physics, chemistry, biology, medicine, economics, psychology, and sociology. It is in this sense that Third World underdevelopment is not only economic, social, and industrial; it also suffers from scientific-cultural underdevelopment, or what we call "The Other Underdevelopment" (Dhaouadi 1988).

The impressive progress of western science since Newton and Descartes does not mean, however, that it has everything right or perfect. In fact, its flaws are becoming more visible. In the last few decades, western science has begun to experience a shift from what is called classical science to new science. Classical science was associated with the celestial mechanics of Copernicus, Kepler, Newton, the new physics of Galileo, and the philosophy of Descartes. Descartes introduced a radical division between mind and matter, while Newton and his fellows presented a new science that looked at the world as a kind of giant clock. The laws of this world were time-reversible, for it was held that there was no difference between past and future. As the laws were deterministic, both the past and the future could be predicted once the present was known.

The vision of the emerging new science tends to heal the division between matter and spirit and to do away with the mechanical dimension

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of the world as represented by classical science. There are four scientists who have contributed to the emergence of this new worldview in science: Niels Bohr (theoretical physicist), James Lovelock (chemist and inventor), Rupert Sheldrake (plant physiologist), and Ilya Prigogine (physical chemist and Nobel laureate). The manifesto of the emerging new worldview arrived at by them could be summarized as follows: the science of physics has to accommodate biological phenomena and to make room for anticipation and intentionality, both of which were banned completely and forever from science by the Newtonian revolution. Today nature abounds with meaning and purpose, a situation that eliminates the division between human and nonhuman nature that was so much a part of classical science. Nature is no longer an alien world of blind mechanical forces; it is alive, as we are, and operates according to the same principles that we do.

Furthermore, Prigogine's view of the universe is very different from that held by classical science:

Before, we had the idea that small causes bring small effects. We had a view of a linear universe. But a universe far from equilibrium is also a highly nonlinear universe, because if it were close to equilibrium, then we could linearize and we would have linear equations. And everybody, just not a great mathematician, knows that linear equations have only one solution. But far from equilibrium, you have many solutions, and therefore in the discovery of the nonequilibrium universe, we discover a universe whose richness is extraordinarily rich in comparison with classical science. (Ideas Transcripts 1985)

With these new principles and outlook on the part of adherents of the new science, some believe that it may now be possible to reach a reconciliation between religion and science. Father Thomas Berry says:

The basic idea now regarding scientific investigation is that it is an interaction of the subjectivity of the mind and the objective world, and these are interacting with each other and producing something we call science or knowledge. But the scientists have become aware of the fact that their knowledge is at least as much subjective as objective. (ibid.)

Jacob Needleman sees the reconciliation between science and religion as plausible, given that certain conditions are met:

Science and religion in that sense can only be really integrated when those parts of ourselves are integrated. You can't integrate science and religion externally through new theories, through new philosophies. You can only integrate those two impulses by integrating their functions within oneself, and that is the job of a real spiritual discipline. (ibid.)

In spite of the promises brought by the new science, the real achievement of the reconciliation and integration of science and religion in modern western culture still faces a great number of hurdles. As such, one should not expect it to be realized within a short time. In fact, it might never take place.

## The Reconciliation of Science and Religion in Islam

This continuous western search for an alliance between science and religion (Prigogine 1979) is a *fait accompli* in Islamic culture and civilization. There has been hardly any religious-science opposition, hostility, and division in the Islamic tradition. The required cooperation in Islamic scientific and learned circles between science and knowledge,<sup>1</sup> which results in human reasoning (*'aql*) on the one hand, and divine and prophetic references (*naql*) on the other, are telling illustrations of the unity and the harmony between the divine, the mystical, the religious and the human, the tangible, and the profane. Islam does not accept dualism, but rather sees a convergence and a unity in such diversity. According to the Islamic view, it is against the nature of things to split matter from spirit, as this violates the most fundamental principle of Islam: oneness (*tawhīd*). The world and the universe are the creation of the One Creator, which means that everything in them must ultimately reflect that unity.

While latent and manifest contradictions, conflicts, and tensions among living creatures cannot be denied, they hardly can undermine seriously the outstanding principle of oneness. Based on this oneness as the thread that leaves absolutely nothing out of its reach, we will present a portrait of the Islamic tradition concerning the integration and reconciliation of science (knowledge) and religion.

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<sup>1</sup>The terms "science" and "knowledge" are used with slightly different meanings. Knowledge is broader in meaning, for it is the human pursuit of understanding things, living beings, phenomena, and so on via all means at a human individual's disposal. Science has a stricter meaning: the adoption of a specific methodology and tools to unveil the nature of what is being studied.

From an Islamic perspective, human knowledge and science must incorporate a spiritual dimension. The term "spiritual" is used for two reasons. First, the goal of human knowledge and science must not be confined to the materialistic side of what is being studied—the nonmaterialistic dimension must also be studied. The spiritual and materialistic aspects of the latter must be looked at as *complementary*. Second, the spiritual aspect of human knowledge and science in Islam implies that they must be the privileged means by which Muslim scientists and scholars communicate with the divine world. In other words, the service of human knowledge and science must not be limited only to the management of human affairs in this world, but must also serve as a means of contact, experience, and ultimate divine salvation. According to the Islamic outlook, depriving human knowledge and science of this meaning of "spiritual" goes against the nature of things. To perceive human knowledge and science and to use them strictly in plain materialistic terms can only narrow their horizons, distort their basic nature, and belittle humans, whose distinct status would have little meaning without the full integration of the "spiritual" into the corpus of human knowledge and science.

To appreciate the Islamic insistence that the spiritual aspect be included in both human knowledge and science, we must know their place in the Islamic worldview. For example, positivist scientists might argue that the strong insistence on the spiritual aspect of human knowledge and science is most likely due to Islam's ignorance or limited understanding of the nature of human knowledge and science as essential means by which humans can eventually transform the tangible-materialistic world. The positivist argument continues: as Islam does not fully understand the crucial role and place of human knowledge and science in the management of human affairs, it is inclined to stress the less important component: the spiritual dimension.

However, a closer examination of how Islam perceives the role and place of human knowledge and science shows quite clearly that such an argument is unfounded. It is no exaggeration to state that Islam views both of them, in the broader sense of the terms, as crucial and as occupying a position of top priority on the human agenda. This is proven by the first verse of the Qur'an revealed to the Prophet, as it speaks of and praises explicitly the value of science and knowledge for humans:

Read! In the name of thy Lord and Cherisher, who created—  
created man out of a clot of congealed blood. Proclaim! And the  
Lord is most bountiful. He Who taught (the use of) the pen—  
taught man that which he knew not (Qur'an 96:1-5).

It is self-evident that God wished to emphasize to the Prophet the importance of seeking knowledge and science. From an Islamic point of view, this search is second to none. From the perspective of social psychology, the Prophet had to be given the most important revelation during his first encounter with the divine. Modern social psychologists assert that *first impressions stick better and last longer in the human memory*. An invitation to the Prophet to read and learn in his first encounter with God is the most appropriate advice ever conveyed to humans. This key message, which is discussed either directly or indirectly by approximately one-sixth of the Qur'an, was amplified and elaborated upon during the remaining twenty-three years of his prophethood.

Seen against this background, the positivists' claim loses all credibility. Such an inaccurate statement is bound to be the result of a general bias against religion and of an enormous ignorance of Islam in particular.

## Human Knowledge and Science in Islam

Islam's recognition of the importance of the spiritual dimension of human knowledge and science does not mean that their materialistic and tangible dimensions are omitted or marginalized. In general, the Islamic outlook opposes all unidimensional stands. In Islam, human knowledge and science are dualistic but *complementary*; just as human beings are formed from a combination of matter and spirit (Qur'an 15:28-9), and therefore have two dimensions, so are human knowledge and science.

The inevitable interaction between these two dimensions does not, however, imply that matter and spirit have an equal impact upon and value for the human actor. Quite the opposite: the breathed divine spirit component is superior to its clay counterpart. Human substantive superiority over other living beings as well as artificial intelligence machines is derived from this breathed divine spirit. Such factors as language, intelligence, thought, religious beliefs, knowledge, science, cultural values, and norms are sets of human symbols that make human beings quite distinct from all other creations.

Moreover, the materialistic and spiritual aspects of human knowledge and science do not mean that they possess equal importance and value. In Islam, the spiritual dimension is *always* more powerful than the materialistic one in their continuing dynamic interaction. The roots of this preference are epistemological, for the spiritual stems from the breathed divine spirit while the materialistic derives from the clay. Thus the two dimensions are complementary, but with a preferential difference.

In general, western rational knowledge and science have done away with the spiritual dimension. The West tends to see knowledge and

science as a unidimensional (materialistic) reality, one that is stagnant and unable to reconcile matter and spirit. In opposition to this, Islam's outlook is dynamic and more apt to unify matter and spirit. It is also more compatible with the Chinese vision of yin and yang (Pessis-Pasternak 1991). As pointed out, modern science, particularly physics, has witnessed a number of developments that go along with the spirit of yin and yang. Bohr's complementary law and Prigogine's dissipative structures and system theory are all attempts to unify opposites: matter and spirit. By moving towards this dynamic direction in their focus on scientific reality, many physicists begin to think of scientists as mystics (*ibid.*).

Given Islam's emphasis on the complementarity of the spiritual and the materialistic dimensions of human knowledge and science, it is appropriate to analyze the latter's main elements. Contemporary western classical scientists in particular would be the first to oppose this proposed idea. First, the idea of a marriage between religion and human knowledge and science is unacceptable. Second, human knowledge and science must aim at universalism, objectivity, and neutrality and avoid being trapped into the narrowness of particularism, subjectivity, and bias.

The first reason should come as no surprise. The history of modern knowledge and science in the West since the Renaissance has been characterized by great conflict and tension between the Christian church and individual scientists. Having won the battle, western scientists of practically all modern disciplines adopted an overwhelmingly hostile attitude towards the idea of mixing human knowledge and science with religious ideas, theories, and concepts. Today it is not even a viable option. Any subject matter discussed, analyzed, and studied from the perspective of religious insight is discredited immediately and judged as invalid. For western classical scientists and scholars, all religions are the same.

There is, however, some confusion when it comes to the required objectivity, neutrality, and universalism of human knowledge and science. This needs to be clarified. Absolute neutrality and objectivity are beyond human capacity. Scientists and scholars are first of all human beings. As individuals, they have their own limitations as regards their pursuit to perceive, identify, understand, and explain what they are after. Furthermore, as human actors, scientists and scholars are bound to be socialized. This takes three forms: family, society, and educational institutions. Given these levels of socialization, it is unrealistic to claim that human knowledge and science could hope to achieve absolute neutrality, objectivity, and universalism. This aspiration is a human ideal, not a realistic and attainable project.

This is in full harmony with the Islamic philosophy of the nature of human knowledge and science. The latter remain always limited in scope

and short-sighted in substance (Qur'an 17:85). In the Islamic perspective, more credible human knowledge and science cannot be secured by just depending solely on the reasoning capacity and intelligence of the human brain. To put it in the terms of Edgard Morin (1990), knowledge and science are ultimately of a complex nature. Human access to the scientific and knowledgeable depth of things remains an unsurmountable challenge (Morin 1990). This is why Islam advocates cooperation between human knowledge and science and its divine counterpart. In other words, Islamic knowledge and science must be the result of the interaction of human reasoning (*'aql*) and revealed knowledge (*naql*). Islam views the dialogue between the spiritual and the materialistic dimensions as a key principle for the establishment of the substance of human knowledge and science. Unlike the West, Islam looks at knowledge and science as a continuum whereby divine and human knowledge and science are both cooperative and complementary, rather than mutually hostile.

Islam does not accept the secularization of human knowledge and science that has characterized western scientists and scholars since the Renaissance. The reason for this is that by eliminating the spiritual, the divine, and the metaphysical dimensions of human knowledge and science, the human capacity to acquire knowledge and participate in science is attacked at the roots. To put it in modern terms, a human being's possession of a fantastic and complex set of human symbols (i.e., language, thought, science, knowledge, religion, cultural values, norms, and myths) is not an accident, but rather the outcome of an intentional divine decision (Qur'an 38:72-73). According to the Qur'an, humans are composed of matter and spirit, and it is the spirit that makes human beings distinct.

This "breathed divine spirit" appears to refer to the great capacity of knowledge with which human beings are gifted. As pointed out earlier, the first revealed verses of Qur'an underline the intrinsic readiness and predisposition of the new human creature to exercise its ability to learn. Reading and writing are uncontestedly human qualities. Furthermore, they are two fundamental and basic tools for any plausible elaboration and expansion of the horizons of human knowledge and science.<sup>2</sup> In addition, the Qur'an also states that "God taught Adam all the names" (Qur'an 2:31). This divine connection is the fundamental origin and the basic source that enables human beings to explore, understand, explain, establish, and uplift the pillars of human knowledge and science. This spiritual connection stands in opposition to the contemporary western vision, based

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<sup>2</sup>The skills of reading and writing (classical general literacy) are still considered far superior to modern electronic audio-visual techniques as regards, for example, the fostering of the ability to think (intellectual literacy).

on Darwin's Theory of Evolution, which has no room for the recognition of the spiritual dimensions of knowledge and science.

Looking at the breathed divine spirit in the manner outlined here enables us to appreciate better the grounds for human distinctiveness. In other words, are we really special and unique? If the answer is yes, what makes us so?

According to the Qur'an, human beings are unique and special creatures because of the breathed divine spirit. The great human capacity to explore, to know, and to make knowledge is definitely one of the distinctive manifestations of that breathed divine spirit. With much less ingenuity, nonhuman living creatures and artificial intelligence machines remain far behind in the areas of the amazing and complex capacity and intelligence that give human beings the potential to explore all things and all phenomena with practically no limitations.

The capacity to know entails the capacity to exercise power on those living creatures and artificial intelligence machines that do not have humanity's enormous capacities for knowing and learning (Russ 1980). This difference explains why humanity has been the master of this planet since time immemorial. The gap between humans and all other (i.e., non-human) creations as regards both groups' capacity to know and to learn has put the latter group at a terrible disadvantage throughout the long history of group interaction and contact.

The issue of who is God's vicegerent (*khalifah*) on earth is no longer a speculative and philosophical question. The concept of "the capacity to know and to learn" should end this old controversial debate. From an Islamic outlook, God is the source of infinite knowledge, and the breathed divine spirit that He has conferred upon humanity has given it a tiny portion of knowledge (Qur'an 17:85). It is that limited capacity of knowledge that determined who would be God's vicegerent (Qur'an 33:72). Why did humanity accept such a risk-laden responsibility? The answer needs no elaboration: humanity was the only real choice, for it alone had a sophisticated capacity for acquiring knowledge and learning. This capacity, which is the result of God's placing the breathed divine spirit in the human individual, is the measure of everything in the Islamic perspective. His appointee on earth is bound to be someone who shares at least a tiny portion of His knowledge. It is in this sense that humanity could be described as the species that most resembles God.

Given that the breathed divine spirit is the origin and the source of the human capacity to know and to learn, Muslim scientists and scholars are expected to echo that reality in their work. This has taken two well-known forms among classical (i.e., pre-modern) Muslim scientists and scholars: a) invoking God at the beginning of their work by praising Him



for His infinite knowledge and compassion towards human and non-human creatures, and b) making reference in the texts themselves to the Qur'an, the hadith, and other elements of the divine to support their arguments, theories, and scientific discoveries. Ibn Khaldūn's famous social science treatise *al Muqaddimah* is a good case in point. This Arab sociologist-historian starts off by invoking God:

Praise be to God! He is powerful and mighty. In His hand, He holds royal authority and kingship. His are the most beautiful names and attributes. His knowledge is such that nothing, be it revealed in secret whispering or left unsaid, remains strange to Him. (Ibn Khaldūn 1989)

In part four of his work, Ibn Khaldūn deals with the sedentary culture of the city and demonstrates through tangible data and evidence that what he calls *taraf* (a culture characterized by excessive sedentariness and luxury) ultimately leads cities to ruin. In support of his convincing and analytical thesis on the correlation between sedentary culture and the collapse of cities, he did not hesitate to advance a Qur'anic statement on the issue to reinforce his observation. He writes:

This is the meaning of the word of God. "When We want to destroy a village, We order those of its inhabitants who live in luxury to act wickedly therein. Thus, the word becomes true for it, and We do destroy it" (Qur'an 17:16). (ibid.)

The message to be conveyed from both the invocation and the reference to the Qur'an is one: Ibn Khaldūn is seeking to return to the origin of all knowledge—God and His revelation. It is like the return of raindrops to lakes, seas, and oceans, the very places from which they had originated. From an Islamic point of view, the interruption of that communication between the source of all knowledge and science and the individual scientist and scholar is an aberrant state that goes against the nature of things in the process of acquiring knowledge and science. It is as unnatural as putting obstacles in space to prevent raindrops from going back to their original source.

The commitment of Muslim scientists and scholars to the principle of returning to the roots of all knowledge is highly compatible with a famous and popular Arabic proverb: "Returning to the origin is a virtue" (*al rujū' li al aṣl faḍīlah*). Being conscious of the fact that the roots of acquired knowledge and science go back to the infinite divine knowledge and science, the Muslim scientist and scholar gives his/her knowledgeable

and scientific adventure a spiritual dimension. Knowledge and science therefore become a means of exchange between human beings and the divine realm that is beyond this world. The invocations and use of divine revelation in scholarly and scientific works by Muslim thinkers are a sort of a devotional prayer and an intimate gesture of thanks to God, the Originator of all knowledge and science.

In Islam, knowledge and science are the means of salvation par excellence for human beings. The ambition of the Muslim scientist and scholar is not limited to the narrow discovery of nature's laws and their use by humans here on this planet. The access to more knowledge and science should only make Muslim scientists and scholars fear God more, for, according to the Qur'an: "The erudite among His bondsmen fear Allah alone" (Qur'an 35:28).

As a result of this factor, the spirit of Islamic knowledge and science is not congruent with the vision of post-Renaissance western knowledge and science. Secularization has run wild in contemporary western knowledge and science, and western scientists and scholars have adopted, in general, an aggressive and hostile attitude with the intention of keeping religion separate from modern knowledge and science.

Perceiving knowledge and science in such a manner enables Muslim scholars and scientists to believe in Islam and to feel a closeness to God. Their counterparts in the West, having eliminated all spiritual aspects from knowledge and science, concentrate on empirical and nonempirical data only. What they are interested in is exploring, understanding, and explaining the phenomena under study as well as applying the accumulated knowledge and science to the management of human affairs. They have no interest in salvation or in communicating with God, as many of them are atheists. As a result, they have limited their horizons to those phenomena that they can see and measure with their five senses.

In the Islamic perspective, the making of human knowledge and science always remains limited and relative in its scope, regardless of the factors of time, the number of scientists and/or scholars, and the quality of research techniques used. In the Qur'an, a sharp contrast is drawn between God's absolute knowledge and science and humanity's limited knowledge and science: ". . . and over every lord of knowledge, there is one more knowing" (12:76) "; "He created all things and is aware of all things" (6:102); and ". . . of knowledge/science you (humans) have been given only a little" (17:85).

This distinction is a basic epistemological twist that sets the scene for reinforcing the spiritual dimension among Muslim scientists and scholars, for it reminds them that their knowledge and science are finite and nar-

row in scope<sup>3</sup> when compared with that of God. The Arabic expression *Allāhu a'lam* (God knows best) is used throughout the Muslim world by all people, regardless of their level of education. Ibn Khaldūn's *al Muqaddimah* is no exception. Although its text is committed to the use of logic, rationalism, and empiricism, it contains many expressions recognizing the superiority of God's knowledge: "God knows best," "God is wise and all-knowing," "God guides towards the truth," and "God knows all," to mention just a few.

While the expression "God knows best" keeps humanity's spiritual bond with the divine alive, it also teaches Muslim scientists and scholars to maintain an open attitude as regards the continuous pursuit and search of new knowledge. The adventure of human knowledge and science can never end, for it is an ever-living experience that will continue as long as humanity survives and insists on improving its condition and understanding. Such an attitude rejects the spirit of stagnation and the principle of final scientific results and findings. In sum, the credibility of human knowledge and science remains ultimately uncertain and tentative. Its credentials are never absolute. As human knowledge and science are the outcome of human trial and error, their very substance appears to have no fixed substance. Instability, uncertainty, fluidity, and mutation are the main characteristics governing the dynamic movements of human knowledge and science.

## Conclusion

Contemporary western knowledge and science are controlled by the convictions and values of individual scientists and scholars. Such a situation is foreign to Islam, which draws its knowledge and science from divine sources. According to the Qur'an, human action must always seek to serve the good of all beings, both human and nonhuman, in this world. Muslims are required to behave in accordance with the famous principle of "enjoin what is right and forbid what is wrong" (Qur'an 3:104). Muslim scientists and scholars are the groups most responsible for carrying out this directive, for they cannot offer the excuses of illiteracy and ignorance.

This same principle must also be the guiding light for Muslim scientists and scholars, for they are invited to study all aspects—both negative and positive—of the phenomena encountered in nature and in

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<sup>3</sup>This is very similar to a conclusion reached by Lloyd Eby, who said that "all human knowledge, including the most certain and deeply held and highly tested scientific knowledge in the 'hardest' of sciences, is uncertain and tentative" (Eby 1991).

society. This is quite normal in theoretical undertakings, but quite another thing altogether when it comes to pointing out the damaging and destructive application of scientific discoveries. In such situations, Islamic ethics leave no room for freedom on the part of Muslim scientists and scholars. They must transcend the "what they *could* do phase" and concentrate on the "what they *should* do phase."

In Islam, the mission of learned people resembles very much that of the prophets. One hadith sums this up clearly: "The scientists-scholars are the inheritors of the prophets." On the one hand, prophets are sent to call people to work for the improvement of human life. On the other hand, they teach people how to overcome their destructive human tendencies with their strong commitment to serve only the good of humanity. Both prophets and scientists-scholars strive for the realization of the spiritual dimension of their human mission.

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