

# ISLAM AND SCIENCE: CONTRADICTION OR CONCORDANCE

by *Fatima Agha Al-Hayani*

*Abstract.* Many question whether Islam and science can be compatible. In the first six hundred years of Islam, Muslims addressed all fields of knowledge available to them with unprecedented zeal and contributed immensely to the knowledge that became the precursor of the Renaissance in Europe. The Tatar invasion in the thirteenth century and the total destruction of Baghdad, the Muslim capital of knowledge and science, followed by the crusades, the ensuing hostility between East and West, and Western colonialism of Muslim countries led to a distrust of all knowledge emanating from the West. Such distrust closed the doors to *ijtihad*, a dynamic method in Islamic jurisprudence for addressing change, new demands, and new acquired knowledge, even though the Qur'an challenges Muslims to think, contemplate, understand, comprehend, and examine everything around them—tasks that bring humankind closer to God as they find methods to apply God's laws of justice and equity to the benefit of all humankind. Islam is the religion of *yusr* (ease) and not *'usr* (hardship). The creation of the world was for human benefit and use. Innovation for such beneficial use and application is a must.

*Keywords:* *ijtihad* (reason); Islam and science; Islamic law and interpretations; *mafsadah* (harm); *masahah* (benefit); Qur'an; scientific knowledge; *Shari'ah* (Islamic law); Sunnah; tradition.

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Faith, reason, and knowledge are intertwined in the quest to enhance the human condition on Earth. In Islam, science and the acquisition of knowledge are not an end in themselves but are one method (albeit a very important one) to comprehend the power and the glory of God. Throughout history there has been a clash between science and religion. Islam is but

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[*Zygon*, vol. 40, no. 3 (September 2005).]

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one of the religions trying to find a way to address the problems and the ramifications of new scientific discoveries. Each religion has found resistance to change and has been forced to address what is new, misunderstood, or not understood at all. Muslims until very recently have dealt only marginally with this situation. Although Muslim scientists and religious authorities have been seeking common ground through ongoing dialogue, the conflict has yet to be resolved. The more advanced the scientific discoveries, the more evident is the friction between the two sides. Each group draws its ammunition from the same Islamic traditions. At the base of the disagreement is the notion that science is a secular pursuit driven and guided by worldly needs and gratifications, without an ethical or religious base to guide these pursuits. Pervez Hoodbhoy states, however, that “the secular character of science does not mean that it necessarily repudiates the existence of the Divine. . . . Scientists are free to be as religious as they please, but science recognizes no laws outside its own” (1991, 2).

Can the Muslim world afford to relegate the discussion of the new sciences to a minor position when, in fact, world civilization is being transformed daily? Some Muslims and non-Muslims believe that Islam is not compatible with modern science. Others offer explanations for why Muslims have yet to follow the modern scientific enterprise in its quest for knowledge and innovation.

An examination of the history of Islam reveals that there was a dynamic period of discovery and innovation in all spheres of knowledge within Islam. Such inspiration, encouraged by the Qur’an, produced an abundance of scientific inventions and works that became the basis for today’s technology in many fields. In addition to the religious sciences—that is, the Qur’an and its exegesis, traditions, canon law, and theology—Muslims contributed significantly to medicine, mathematics, astronomy, botany, geology, mineralogy, logic, metaphysics, literature, ethics, and politics (Hayes 1983). For example, Ibn al-Haitham studied the course of rays of different types of light falling on different types of mirrors at different angles of incidence and formulated the second law of reflection. Ibn Khurdadhbah determined the latitudes and longitudes of various places in the Muslim empire, and al-Bairuni ascertained the specific gravity of a number of substances.

Muslim scientists also made original contributions to technology by preparing star maps for navigational purposes, and Ibn Yunis made use of the pendulum for the measurement of time. Avicenna used thermometers to measure air temperature. Other Muslim scholars contributed in the area of mathematics, such as in algebra (itself an Arabic word), which they developed to solve quadratic equations. They also began using sine, cosine, and tangent instead of the chord of the Greeks. They made sophisticated advances in plane geometry and trigonometry and invented the algorithm named after its discoverer, al-Khawarismi, who was also the first author on

the subject of *al-jabr*, algebra. Optics and ophthalmology were highly advanced. Such scientific works were thoroughly studied in Western academic institutions and had a great deal of influence on scientific development in the modern world. A prime example is the book *al-Qanun (The Canon of Medicine)*, compiled in the twelfth century by Avicenna. This comprehensive medical work and standard textbook of medicine in Europe continued to be used as a text as late as the seventeenth century.

As a cultural movement Islam was dynamic. The new culture “finds the foundation of world unity in the principle of *tawhid* (oneness)” (Iqbal 1998, 256). This unity considers the whole world and all the changes therein to be an intrinsic aspect of the creation, so Muslims must accept the reality that all life reveals itself in variety and change (1998, 256). To accommodate such changes and new developments, Muslims developed the concept of *ijtihad*, which means to exert effort and apply knowledge in studying the precepts set in the Qur’an and the Sunnah of the Prophet to form an independent judgment on a legal question. The most important precedent of *ijtihad* began during the life of the Prophet when he appointed Mu’adh ibn Jabal (d. 627) ruler of Yemen and asked him how he would decide matters that might come before him. His answer was that he would first consult the Qur’an. The Prophet then asked him, “And what if the Book of God does not contain the direct information to guide you?” Mu’adh answered that he would then consult the Sunnah (statements and traditions of the Prophet). “And what if even the Sunnah does not contain the direct information you need?” asked the Prophet. Mu’adh answered that he would apply his own *ijtihad*. The Prophet was well pleased with this answer, thanked God that there were Muslims who could think and use *ijtihad* to apply the law, and said: “Praise be to God who has caused the messenger of God’s Messenger to please the latter” (Abu Dawud, *Sunan III* 109, *Hadith* 1038).

Looking at the Muslim world today, nearly fourteen hundred years after this initiative to do *ijtihad* and after the encouragement by the Prophet to do so, it is difficult to visualize and accept the historical facts that chronicle the Muslims’ ascendancy to a very high level of knowledge in almost every sphere between the eighth and the fourteenth centuries. The intellectual thrust and openness to learn, translate, absorb, and synthesize as much knowledge as possible left an unsurpassed legacy that was to be the precursor and the base of the European Renaissance. Yet, for the last five hundred years Muslims have lived in a kind of cocoon, seemingly incapable of breaching the walls they have constructed around themselves. Hoodhboy states, “The part of humanity which once seemed to offer the greatest promise now appears inescapably trapped in a state of frozen medievalism” (1991, 1).

Various circumstances contributed to this state of stagnation and to this inertia. However, to state that Islam itself is the reason—that Islamic law

is static, unable to address new ideas and new scientific discoveries; that Islam does not have the base, the concept of rationalization, the wherewithal to move forward in order to benefit its constituents—is utterly false. Within Islamic law and from ancient times Muslim scholars developed complex and elaborate legal systems based on the intent present in the Qur'an and the Sunnah to address the needs of Muslims. In doing so, they were following the exhortations in the Qur'an. They developed legal precepts that guided scholars in every field. They created the mechanism, the steps, and the deductive and inductive methods to address issues that concern Muslims and would enhance their lives. If Muslims accept the Qur'an as the final word from God for all times, the Qur'an must contain the way, and it is up to Muslims to find it.

How and why did Muslims become rigid in their interpretations? Why have they in the last five hundred years followed only the letter of the law and not its spirit? What is the position of Islam and Islamic jurisprudence on the issues of innovation and discovery? Do Muslims believe that scientific discoveries pose a threat to the faith? Is there a contradiction between Islam and science? Are there guidelines delineated in the Qur'an and the Sunnah that should guide Muslim scientists in their endeavor to reach out and find scientific solutions and make discoveries?

Historically, as already mentioned, the situation was very different. For example, during the time of the Prophet and the first four caliphs, Muslims were able to strike a harmonious balance between the temporal and the spiritual. The Muslim empire grew, and learning and innovation prospered. Then, in the middle of the thirteenth century, a tragic experience shocked the Muslim world and changed Muslim history—a shock followed by others that proved to be catastrophic and from which Muslims have yet to recover: The Tatars attacked and destroyed Baghdad, the center of Muslim intellectual life. This terrible destruction triggered the beginning of the decline of innovation and created the fear of further disintegration of the Muslim community. New *ijtihad* was discouraged, and the *Shari'ah* (Islamic law) expounded by the early scholars was to remain the basis for any new legal opinions, unchanged.

Even though Islam produced scholars who applied *ijtihad*, they contributed only a few minor advances. One reason was the political and economic conditions. Colonization by the West of most Muslim countries caused Muslims to resist accepting the new (Western) sciences and left them unable and unwilling to cope with the new (Western) innovations. Moreover, colonizers' appropriation of the colonies' resources for the benefit of the colonizers impoverished the Muslim world. Another factor was the superimposition of Western thought and way of life, which were very different from those of the colonized countries. Such circumstances made it difficult for Muslims to open the doors of *ijtihad* in order to address new

problems and situations. Asghar Ali Engineer writes that “impoverishment of [colonized Muslim states] made them more insecure which, in turn, made them cling to their traditions and customs more tenaciously”; and, even though Islam has no priestly hierarchy, “the theologians lost power and influence they wielded during the Muslim rule and thus they became hostile to modern science and modern rationality” (2002, 3).

Other scholars concur, offering similar explanations for the lack of Islamic discourse on the compatibility of science and Islam. Although Hoodbhoy blames Muslims for having failed to embrace science, which led to their retreat as the West advanced, he also cites the bitter confrontation of the crusades and the Ottoman occupation of the Balkans as contributors to the present prejudice and resentment between the Muslims and the West (Hoodbhoy 1991, 3). Given their distrust of the Western colonizers, Muslims were convinced that the science embraced and encouraged by the West was a secular endeavor intent on undermining the theological base of Islam. Muslims were “left numbed, disoriented, and unsure of themselves” (Hoodbhoy 1991, 3). They began to question the compatibility of Islam and science.

The most important source about Islam is the Qur’an. Where does the Qur’an stand regarding such compatibility? Careful study of the Qur’an yields many verses that directly or allegorically deal with this subject. These verses make clear that science is in harmony with Islam. Furthermore, the Qur’an and the Prophet have decreed that knowledge and its acquisition are required of all Muslims. The Qur’an states: “Say, (O Prophet) O my Lord, increase me in knowledge” (20:114). Also, “Read! And thy Lord is Most Bountiful; He Who taught the use of the pen, Taught man that which he did not know” (96:3–5). In fact, the Prophet reminded Muslims to seek knowledge even if it existed in China. The implication of this statement is that though the road for the acquisition of knowledge may be extremely difficult, Muslims must traverse it.

The Prophet urged Muslims to acquire knowledge and learning from the cradle to the grave, making it the duty of Muslims to seek knowledge in all spheres of life and in all disciplines. The Prophet made learning mandatory for both males and females. Islam regards intellectual faculties as a gift from God, and with God’s help and guidance our task is to create a better and healthier world for all of humankind. However, any scientific discovery must emanate from a value system or base. Muslims must treat scientific knowledge as a trust and, as such, hold it in concordance with the laws set forth by God. These laws must be applied with equity and justice to benefit not only the world’s human community but also the existing ecological systems. All aspects of any scientific endeavor are to be pursued with piety, following the guidelines set forth in the Qur’an. We are to remember that if and when a discovery is made it is through the grace of God. The Qur’an states: “O you, assembly of Jinns and men! If

it be you can pass beyond the zones of the heavens and the earth, pass! Not without Our authority shall you be able to pass" (55:33).

As far as Muslims are concerned, problems arise when new knowledge is sought and acquired without an in-depth study of the moral and religious ramifications. Such study requires an understanding of the Qur'anic scriptures and their interpretations by qualified Muslim scholars. Muslim jurisprudence offers a plethora of studies and methods to deal with new issues and new problems. Before delving into the position of the scholars, let us examine the Qur'an and its position toward science and knowledge.

Islamic theology is based first and foremost on the revealed material contained in the Qur'an. The first step, then, is to analyze Qur'anic scriptures that address the concept of knowledge, of our role in the quest to understand God's creative order and our responsibility in comprehending the ultimate mechanics of this creation. There is a rationale behind this quest: By realizing God's power and glory we may come closer in reverence and in worship to the Almighty. The Qur'an clearly states that those who are closest in relationship to God, who are in awe of God, are those who have knowledge (35:28). In fact, the Qur'an questions whether it is possible to equate those with knowledge and those without knowledge. The Qur'an states, "Say: 'Are those equal, those who know and those who do not know?'" (39:9) Numerous verses exhort Muslims to examine, observe, question, analyze, deduce, and induce as they contemplate the creation of God. These injunctions appear in more than 750 verses in the Qur'an. In fact, such studies are even considered a form of worship.

To urge us to examine the world around us and try to understand it by using our intellect, the Qur'an addresses many natural phenomena in the created world. The Qur'an states that the world was created with true proportions (6:73). The implication is that our increased knowledge will help us to see the universe not as chaotic but as governed by laws: "Do they see nothing in the government of the heavens and the earth and all that God hath created?" (7:185) God regards creation and the laws therein as signs of his glory and benevolence. The Qur'an cites the alternation of night and day as a sign for pious and contemplative believers (10:6).

The Qur'an clearly states that the gifts God has bestowed on humanity are for our use and comfort and reminds us that our mental capacities render us capable of using God's creation to benefit ourselves: "It is God Who made your habitations homes of rest and quiet for you; and made for you, out of the skins of animals [tents for] dwelling, which ye find light and handy. . . . It is God who made out of the things He created some things to give you shade; of the hills He made some for your shelter; He made you garments to protect you from heat" (16:80–81).

The Qur'an's discussion of natural and scientific phenomena points out the complexity of the universe and invites us to delve deeper in our quest to comprehend it, master it, and use it for our benefit and comfort, as was

God's intention: "Or [another similitude] is that of a rain-laden cloud from the sky: in it zones of darkness, and thunder and lightning" (2:19). In many other verses God reminds people of his bounty and of the intellectual faculties given to us to use this bounty to our advantage. This message is clear: "Behold! The creation of the heavens and the earth; in the alternation of the Night and the Day; in the rain which Allah sends down from the skies; and the sailing of the ships through the ocean for the benefit of mankind; and the life which He gives therewith to an earth; in the change of the winds, and the clouds which they trail like their slaves between the sky and the earth—[there] are indeed signs for people who are wise" (2:164). The subjugation of nature to man's needs is clearly stated: "it is He who made the ships subject to you, that they may sail through the sea by His command; and He has made the rivers [also] subject to you" (14:32). Another all-encompassing statement sums it up: "Don't you see that Allah has made subject to you [humankind] all that is on the earth?" (22:65)

In studying the Qur'an, one notices that God engages humankind in a dialogue and provides many examples that call on us to use our intellect and reason. After all, what differentiated Adam from all other creation but his endowment with knowledge above and beyond that of all other creatures combined with the capacity to analyze and create? Humankind may contemplate the power of God even through one of his tiniest creations. "God does not disdain to use similitude of things, lowest (*ba'uda*) as well as highest" (2:26). *Ba'uda* is the original Arabic for "gnat"—a byword for one of the weakest and tiniest of the creatures. (Other examples are found in 29:41 and 22:73.) The example of the gnat draws our attention to the intricacies of creation. Each creation, big or small, presents an astounding combination of parts and physical abilities for survival and procreation that boggle the mind.

A number of important terms, repeated often in the Qur'an, address the intellectual faculties that God exhorts us to use: *yatafakkurun*, those who think, study a subject, and decipher its meaning; *yafqahun*, those who comprehend; *ya'qilun*, those who are capable of rationalization; *ya'lamun*, those who know; *yafhamun*, those who understand. God's information and guidance are for those who ponder, comprehend, have mental intelligence, know, and understand. The Qur'an challenges these individuals continually to forge ahead in all endeavors for the sake of God and for the benefit of creation.

Allah tells the Prophet, "Say, this is my way: I do invite to Allah, on evidence clear as the seeing with one's eye" (12:108). The Arabic term for seeing with one's eye is *ala basira*. Muhammad Assad (1980, 354 n. 104) interprets the call to the Prophet as "the outcome of a conscious insight accessible to and verifiable by man's reason: a statement which circumscribes to perfection the Qur'anic approach to all questions of faith, ethics

and morality.” God reminds us to look and examine. The signs of creation are there for those who are capable of understanding, who possess the capacity to reflect and interpret: “Here is a Book which We have sent down unto thee, full of blessings that they may meditate on its Signs, and that men of understanding may receive admonition” (38:29). The Qur’an is addressed to those who seek to understand and comprehend.

With such clear statements and with the command that humankind think, elaborate, delve, and discover, we consider the second important factor in analyzing the connection between Islam and science: the interpretation and the position of the Qur’an as the scholars address the intent and objectives of the laws in the Qur’an and the Sunnah. In the early stages of Islam, Muslims incorporated the heritage of previous civilizations. Later, through the genius of its scholars and the impetus of the Qur’an to discover and learn, Muslim scientists turned their interests away from adaptation to creation. Seyyed H. Nasr (1968, 25) states that what Islam brings to preexisting traditions “is the strong unitary point of view that, along with a passionate dedication to the Divine Will, enabled Islam to rekindle the flame of science that had been extinguished at Athens and in Alexandria.”

To derive the law from its source, the Qur’an, jurists developed a system called *usul al-fiqh* (the base, or root, of jurisprudence). Because God created everything for our use and benefit, it stands to reason that all knowledge must have as its purpose, objective, and goal to benefit humankind. The jurists identified three degrees of knowledge: (1) *‘Ilm al-Yaqin*, knowledge by inference, which depends on either the truth of its assumptions, as in deduction, or on probabilities, as in induction; (2) *‘Ayn al-Yaqin*, knowledge acquired by perception or observation, which is based on the actual experience of phenomena; and (3) *Haqq al-Yaqin*, knowledge by inspiration. Allah is the One who reveals his signs in two ways: in the observation and contemplation of the outer world and through “the inner experience of the mind” (Siddiqi 1988, 190).

To interpret the revelation, both al-Ghazali (d. 504/1111) and Ibn Taymiyya (d. 728/1328) made a distinction “between the validity of universals (*kulliyat*) derived from the Revelation, and of universals for which there is no Revelational evidence” (Khadduri 1984, 179). This statement is a crucial point for jurists as they address the ethical aspects of new scientific discoveries and their application. Revelations that deal with religious and clearly defined legal matters must be accepted without discussion. In issues that have no clear revelational evidence, however, reason, induction, and deduction can and must be applied, provided they are in conformity with the intent and the purposes of the law (*maqasid al shar*). Ibn Taymiyya applied a balanced stand “between the idealism of deduction and the realism of induction” (Khadduri 1984, 179). He based his opinions, however, on positive sources of the law to include precedent and custom that are in



conformity with *maqasid al-shar'* (intent and purposes) of the *Shari'ah*. He also addressed the *masalih* (benefits) of the public, inasmuch as *maqasid* must be studied in order to reach *masalih*.

Many scholars agree that the intent of the law as well as the public interest should be seriously considered in the process of arriving at any legal opinion. As a result, they have delineated *al-maslahah al-ammah* (public benefit) as they addressed new issues. The concept of *maslahah* in its various aspects addressed one essential and basic point: consideration and protection of the necessities of human life. The companions and successors of the Prophet resorted to the Qur'an and the normative example of the Prophet; when they found no answer in these sources, however, they exercised their opinion. They were following the *hadith* (sayings of the Prophet): "The best of your religion is that which brings ease to the people." One of these methods was *istihsan*<sup>1</sup> accepted by Imam Malik, who observed that it "represents nine-tenth of human knowledge." According to Abu Zahrah (1958, 207, 215), *istihsan* includes the broad concept of *maslahah*: "For it is *maslahah* which accounts for the larger part of the nine-tenth." Other methods applied within the *Shari'ah* are *masalih mursalah* (consideration of public interest). According to al-Ghazali, *maslahah* consists of considerations that secure a benefit or prevent a harm but are, in the meantime, harmonious with the objectives (*maqasid*) of the *Shari'ah* (Al-Ghazali 1970, 139–40; Kamali 1991, 338).

Al-Shatibi (d. 790/1388), a great Muslim scholar on the intent of law (*maqasid al-Shar'*), discusses the necessary relation between human needs, *maslahah*, and intelligibility as a qualification of legal commands allowing a major role to "human reason in the interpretation, justification and extension of the rulings of the Shari'a" (Masud 1977, 287–88). Al-Shatibi further states that harmful things that impede the achievement of human needs are revocable. The scholar must take into account the rationality of the law, his or her responsibility to humankind, protection from harm, and conformity to the objectives of the Lawgiver. Any issue must be weighed between *maslahah* and *mafsadah* (harm). If the elements of an act contain more *maslahah* than *mafsadah*, the act must be considered *maslahah*.<sup>2</sup> In some instances, both al-Tawfi and al-Ghazali believed that *maslahah* should override a textual source, given that the Shari'ah was laid down "to protect the public interest which is the ultimate purpose of the Divine Legislation" (Khadduri 1984, 181–82). Al-Tawfi advocated the use of *maslahah* as an overriding principle and based it on the *hadith* that states, *la darar wa la dirar* (no injury shall be imposed, nor shall it be inflicted as a penalty for another injury) (1984, 181–82).

There are five basic steps that shed the best light on the dynamic system of *maqasid al-shar'* developed in Islamic law. They adhere to the ethical premise in the Qur'an and delineate the path to be taken to alleviate poverty, disease, and misery in the world and to create well-being, good health,

and prosperity. The steps are rooted in the two concepts of *maqasid* and *maslahah*. According to al-Shatibi, they are as follows. The first step must reveal the necessary relation between human needs and *maslahah* and details them in different areas. The second must show intelligibility as a qualification of legal commands. The implication is that a major role is given to human reason in interpretation, justification, and extension of the rulings of the *Shari'ah*. The third must show that harmful things that do not fulfill human needs and could impede them are revocable. The fourth states that blind obedience without asking the rationale behind a command, other than those applied essentially to *ibadat* (acts of worship), is not acceptable. The fifth states that an act of obedience is to conform to the objectives of the lawgiver and/or to obey the intent of the Law (Al-Shatibi n.d. I:287).

Malik ibn Anas, another great scholar, stated that when the use of *maslahah* is compatible with the objectives (*maqasid*) of the Lawgiver, or is within the category of what is expressly validated, it must be upheld. To neglect it under such circumstances is to neglect the objectives of the Lawgiver. *Maslahah* applied as such is a norm of the *Shari'ah* in its own right and is an integral part of it (Abu Zahrah 1958, 279–80).

Islam clearly espoused such methods in its early years. Its scholarly works present a viable and intricate methodology for dealing with scientific innovations. Legal methods (*fiqh*) present in Islamic law offer many possibilities and methods for dealing with discovery and innovation that could benefit humankind. Muslims must consider *ijtihad* a duty in order to ascertain that new scientific discoveries that offer more benefit than harm are available for the Muslim and world community. God demands that we reap the benefits of his creation and addressed the Prophet: “We sent you not, but as a mercy for all creatures” (21:107).

The concept of *maslahah* based on the *maqasid* inherent in the Qur'an has undergone further formulation in modern times as a result of the expansion and magnitude of changes on all levels—social, medical, political, and technical. To address these issues, the movement of modernism in Islam must search in the Islamic legal traditions for a way, a principle, that can address the changing conditions. The leading scholars in the four Sunni schools agree, in principle, that genuine *masalih* (plural form of *maslahah*) must be upheld provided they do not conflict with objectives of *maqasid* of the Lawgiver. Some differences exist on points of procedure, but the concept has been accepted by the majority.

That new studies were required to resolve new problems was clear and accepted procedure to the early generation of Muslim scholars. Changes and conditions of life will continue to generate new interests and new dilemmas. New medical techniques are affecting all aspects of human life and the world we live in. To place boundaries on Islam and on Islamic law to prevent Muslims from coping with the new techniques would fall short

of meeting the *maslahah* of the community. This would result in stagnation and would needlessly restrict the *Shari'ah* to addressing and accommodating social, political, and medical changes. Such a stand is contrary to the *maqasid* of the Lawgiver and to the injunctions set forth in the Qur'an and the Sunnah.

Islam is a dynamic religion. It engages the intellect to seek knowledge that could deepen reverence and praise through an understanding of God's creation. Islam is the religion of *yusr* (ease) not *'usr* (hardship). Many verses in the Qur'an invite us to examine, to ponder, to seek, and to interpret the creation of God. Moreover, this creation is intended for our benefit and use. To learn is a must; to invent, to derive new methods, and to apply that which is beneficial to humankind is a Muslim duty. As Muslims advanced in the first seven to eight hundred years following the commands set forth in the Qur'an, so must they now. Islamic law derived through the interpretations of the Qur'an and the Sunnah is based on the spirit of the law. Muslim scholars throughout the early years found no contradiction between innovation and Islam so long as the benefits to and the interests of the public were served. Of primary importance is adherence to the spirit of justice, equity, and benefit required by the Qur'an. They were convinced that the spirit of law must be upheld and always remain paramount.

Both the Qur'an and Islamic law show that no contradiction exists between Islam and the sciences; Islamic sources offer ample directives and injunctions that support a concordance between them. Yet this concordance is not without limits: any and all initiatives in any and all studies must have the ultimate goal of serving God's law, which is to benefit humankind and eliminate or diminish harm. God created the world and all that is in it for us to use, to safeguard, and to reap its benefits, following the guidelines of mercy, generosity, kindness, and benefit to all of creation.

## NOTES

1. This is the principle according to which Islamic law is based upon a general principle in preference to a strict analogy pertaining to the law.
2. For in-depth study of this concept, see Masud 1977.

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