

The Islamic Approach to the Modern Sciences

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Introduction

The Qur'an is a book of guidance; among its several names is Kitab al-Hikmah or the Book of Wisdom. The verses of the Qur'an are called ayath (signs), just as are the phenomena of nature: both speak forth the presence and worship of Allah. We shall show them Our portents on the horizon and within themselves until it will be manifest unto them that it is the Truth (Qur'an, 41: 53).

In over 1100 verses, the importance of thinking, reflecting and pondering on the signs (natural phenomena) of Allah is emphasized; among these are. 2: 230, 242; 6:97-8; 10:24,67; 13:3-4; 14:25; 16:11-13, 44. 67-9, 90; 20:54; 23:30; 26:8; 28:43; 29:44; 30:20-9; 37:55; 38:29 39:18,21,27,42; 45:3-5,13; 51:49; 59:21.

The greatest gift of Allah to man is the ability to think which distinguishes him from all the animals on earth. The Qur'an declares that the universe and all that there is in it is created by Allah as a 'sign', a manifestation of His mercy, power and wisdom. It is also a manifestation of His bounty and goodness; for He has created things for man's benefit. Mankind is enjoined to consider Allah's handiwork, to reflect on the wonders of His creation.

As man was created with an insatiable desire for knowledge, God made adequate arrangements for him to know the hidden secrets of the universe and taught him the nature and names of all things (2:31). Then all the powers and treasures of the heavens and the earth were made subject to him. He has subjected to you, as from Him, all that is in the heavens and on the earth; Surely in that are signs for those who reflect. (45:13) He has made subject to you the night and the day; the sun and the moon; and the stars Are in subjection by His Command;

Verily in this are signs for men of understanding. (16:12)

It is He who made the sea subject, that you may eat thereof flesh that is fresh and tender, and that you may extract there from ornaments to wear; and you see the ships thereon that plough (the waves, that you seek (thus) of the bounty of God and that you may be grateful. (16:14

In Islam there is no conflict of principle between science and religion. Both have always existed within man's innate nature without contradiction. Both are means of paying homage to God and worshipping Him who is the Lord and Sovereign of all. The desire to know the mysteries of the earth and the universe has existed in man from the beginning of his creation. Prophet

Abraham exemplifies this (upon him be peace):

Behold! Abraham said: My Lord! Show me how Thou givest life to the dead. He (God) said:

Dost thou not then believe? He said: Yes! But to satisfy my own understanding. (2:260)

The above verse clearly points to the truth that in a sound human nature there is no contradiction between these two innate tendencies, the desire to know and the desire to worship. Both help man to commit himself wholly to the worship of God and follow His Guidance. The quest for knowledge of the manifestations of God's Attributes in the universe

leads to God-fearing:

Those truly fear God among His servants who have knowledge. (35: 28)

Just as worshipping God in hope and in fear is natural and human, so too the desire to know more about the world around us and to use its vast resources for the benefit of man is quite natural and human. In Islamic culture, it is a sin to separate and departmentalize science or knowledge and religion. Islamic culture rules the mosque and the school, the market and the laboratory, the home and the presidential office. The law-courts and the legislative assemblies, in short, every aspect of human life (Rahman. 1985. vol.1. p 254-310).

Man is endowed with mind, that is with intelligence or power of reasoning. The Qur'an has laid great emphasis on the proper development of this faculty, on the acquisition of knowledge through observation, experience, and meditation. A Divine injunction commands every Muslim, man and woman, to seek knowledge from the boundless and ever-revealing treasures of knowledge and truth in nature and in all God's creation.

The Qur'an also teaches man to find the 'truth' and 'reality' of things through reasoning and argument, not through unquestioning acceptance of ancestral beliefs without substantiating evidence and argument. The Qur'an was the first book to demand proof in support of every 'conventional truth' or 'historical legacy', to ask 'why' it should be accepted. At the same time, it provides proof and evidence in support of its claims and contentions.

The method and style of reasoning of the Qur'an are quite different from those of philosophers and orators. This is because it is inviting people to believe and have faith in the Truth it has brought from God. A strong faith is essential for man to seek to do what is right consistently, because it is right, but such a strong faith cannot be achieved without reasoning and strong and convincing arguments.

It is therefore necessary that natural and simple arguments be given that can satisfy and convince an ordinary man in the street and thereby strengthen his faith. This approach awakens human intellect from its slumber and leads it on to perceive and critically observe even' phase of life and every phenomenon in nature (Islahi, 1978, pp. 101-117).

The Qur'an not only provides reasoning and arguments to prove its point but also develops the faculty of reasoning in man. This is because a total revolution in the individual and collective life of man cannot be brought about without fully awakening his faculties of thought. The Qur'an provides reasoning that prepares the ground for the creation of this wholesome thought in the heart and soul of man:

He bestows wisdom upon anyone He wills, and he who is given wisdom is in fact given abundant wealth, but only those who have common sense learn lessons from these things. (2: 269)

The Qur'an designates the whole world as the arena for human activity: this world is filled with a vast range of diverse objects created to challenge and be intelligible to the human faculties of thought, reflection, observation, which are, in turn, capable of discovering the deepest meaning and usefulness of the world.

To understand the purposiveness of the created world, scientific and technological knowledge is imperative. The Qur'an, therefore, declares that the world is full of beauty and utility, and opens it up to human understanding, appreciation and use. If such a direction had not been given by the Qur'an with the clarity that it is, then the Divine design in the creation would not have been accomplished.

It is by Muslims who combined a passionate commitment to the absolute Transcendence and Oneness of God with a passionate dedication to the Divine Will, that the flame of science extinguished in Athens and Alexandria was rekindled. Science is not Divine revelation but it can provide a means to the betterment of mankind and to a better understanding of Allah's creation and its purpose. Science is knowledge and Islam has laid great stress on acquisition of knowledge; the Qur'an enjoins God's servants to beseech Him thus: O Lord! Increase me in knowledge (20:114).

Also, God's Messenger, upon him be peace, encouraged, through his precept and practice, the spirit of investigation and analysis of facts. The Qur'an says that Allah has made the universe subservient to human capabilities:

And He has subjected to you, as from Him all that is in the heavens and on earth: Behold, in that are signs indeed for those who reflect. (45:13)

The 'reflection' here referred to is nothing different from the scientific spirit, which leads to

understanding of and discoveries in the creation. In Islam, learning and searching for knowledge is a religious duty of every Muslim. The Qur'an appeals constantly to reason and experience and thus it pointed for the first time to the principle that science could be based on experiment as well as theory. The observable aspect of reality is emphasized by the Qur'an in

several verses. One of these verses is:

Assuredly, in the creation of the heavens and of the earth; and in the alternation of night and day: and in the ships which pass through the sea; and in the rain which God sends down from heaven, giving life to the earth after its death, and scattering over it all kinds of cattle: and in the change of the winds, and in the clouds that are made to do service between the heavens and the earth-are signs for those who understand. (2: 164)

In another verse the Qur'an proclaims:

And it is He who has ordained the stars for you that you may be guided thereby in the darkness of the land and the sea. Clear have We made Our signs to men of knowledge. (6:95)

From over 1100 Qur'anic verses, and from the writings of numerous Eastern as well as Western scholars, it is evident that modern science owes its very existence to Islam. The new spirit of enquiry and the new methods of experiment, observation and measurement, on which modern science is based, are all contributions of those who followed the teachings of Islam

Scientific achievements

Within a century after the death of the Prophet Muhammad, upon him be peace, the Muslims not only conquered new lands, but also became scientific innovators with originality and productivity. The rise of Muslims to the zenith of civilization lasted over a thousand years. During this millennium Muslims contributed greatly to the enhancement of arts, sciences and cultural growth of mankind.

At the apex of its glory around the tenth century, Cordoba, the capital of Muslim Spain, had pavements, street lighting, three hundred public baths, parks, palaces, one hundred thousand houses and seventy libraries. There were close to half a million books in a single library whereas the whole of France contained much less than this figure.

By the ninth century, Islamic medical practice had advanced to hospitals with wards, doctors who had to pass tests, and the use of technical terminology. The then Baghdad General Hospital incorporated innovations which sound amazingly modern: the fountains cooled the air near the wards of those afflicted with fever, the insane were treated with gentleness; and at night the pain of the restless was soothed by soft music and storytelling.

The prince and pauper received equal attention; the destitute upon discharge received five gold pieces to sustain them during convalescence. While Paris and London were places of mud

streets and hovels, Baghdad, Cairo, and Cordoba had hospitals open to both male and female patients, staffed by attendants of both sexes. These medical centers had libraries, pharmacies, a system of interns, externs, and nurses. There were mobile clinics to reach the disabled, the disadvantaged and those in remote areas.

There were regulations to maintain quality control on drugs. Pharmacists became licensed professionals and were pledged to follow the physician's prescriptions. Legal measures were taken to prevent doctors from owning or holding stock in pharmacies. The extent to which Islamic medicine advanced in the fields of medical education, hospitals, bacteriology, medicine, anesthesia, surgery, pharmacology, ophthalmology, psychotherapy and psychosomatic disease would require several volumes to describe fully.

It is most important to note that the Muslims preserved the cultures of the conquered lands. The Islamic empire for more than 1000 years remained the most advanced and civilized society in the world. This is because Islam stressed the importance of and respect for learning, forbade destruction, and nurtured in Muslims the respect for authority and discipline, and tolerance for other religions. The Muslims recognized excellence and

hungering intellectually, were eager for the wisdom of the world of Galen, Hippocrates, Ptolemy, Dioscorides, Aristotle, and Paul of Aegina. By the tenth century their zeal and enthusiasm for learning resulted in all essential Greek writings being translated into Arabic in Damascus, Cairo, Baghdad. Arabic became the international language of learning and diplomacy. The center of scientific knowledge and activity shifted eastwards, and Baghdad emerged as the capital of the scientific world.

Islamic medicine is one of the most famous and best-known facets of Islamic civilization, and in which the Muslims most excelled: for example, they performed eye surgery 600 years earlier than in Europe. But they excelled in many other fields as well. For example, the Muslims used paper 200 years before Europe, invented spherical trigonometry in the late 10th century, solved equations of the third and fourth degree, binomials to the n th degree, and developed differential and integral mathematics.

They discovered the force of gravitation, blood circulation, laws of motion, including planetary motion, and even developed the theory of evolution and taught it in their universities. They measured the circumference of the earth and value for specific gravities correct to three decimal places almost a thousand years ago.

There is hardly a field of knowledge where Muslims did not research, think or investigate, explore or invent, something exemplary. And the greater part of these achievements were passed on to Europe, enabling its intellectual and cultural Renaissance, a historical reality now

.beginning to be widely acknowledged in the West

The motivating factors

The zeal and enthusiasm to reach such a peak was the result of Islam's insistence on learning. The Qur'an itself is the greatest motivating factor in this regard: Islam is a rational religion. Repeatedly the Qur'an appeals to men to use their reason and especially their common sense in matters of religion. Historical experience goes to prove that a large measure of free thought is absolutely necessary to human progress, and at the same time those nations, which lose faith in God, deteriorate. To most modern Westerners religious commitment and free thought are incompatible.

However, the experience and history of Muslims prove that they are perfectly compatible. In the early centuries of Islam, an intense faith in God was combined with free thought in every field of knowledge and endeavour; for Islam held nothing in human knowledge so sacred as to be immune from criticism.

The Creator of the universe and the earth had bestowed on man the gift of reason, which is extolled by Muslim writers as the highest gift, to be used quite freely in the name of Allah - that is to say, with the purpose of pursuing what is good and eschewing what is evil, for which the sacred law affords guidance and safeguards. There is no priesthood in Islam, however the most wise and learned men became the natural leaders. As a matter of fact, scholars are described as 'the heirs of the prophets'. (Syed, I.B., 2002)

The Qur'an asserts that those who have no knowledge are not equal to those who have it, and that those who do not observe and make sense of what they observe are worse than cattle. It also asserts that the meaning of revelation becomes clear to those who have knowledge and who have understanding, emphasizing that whosoever has been given knowledge has indeed been given an abundant good and that of all things, it is knowledge by which man is superior to .angels and has been made vice-regent of God on earth

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