

Derinlik No.	
Tasnif No.	

SELÇUK ÜNİVERSİTESİ
İLÂHİYAT FAKÜLTESİ
DERGİSİ

S.U. İLÂHİYAT FAK. KÜTÜPHANESİ

Yıl: 1997

Sayı: 7

FAKÜLTE YAYIN KURULU

BAŞKAN

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SEBAT OFSET

KONYA - 1997

SCIENCE AND CIVILIZATION IN ISLAM

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Islam, in its true essence and spirit, is not merely theoretical, but also practical on a large scale. Its teachings match the physical laws of nature, and do not neglect the normal needs of human bodies and their lot of life. So, Islam is both a code of worship and way of life practicable for all times and applicable to all human issues. As it has been made clear in the Holy Qur'an and in the Hadith's of Prophet Mohammed (peace be upon Him).

Islam and Science

Today, some muslims accept the widespread view that modern science is a 'secular' enterprise. However, this attitude conflicts with the approach to seeking knowledge evident in the Qur'an. Belief in 'Tawhid', the core of the Qur'an's teaching, certainly, rejects any division of human life, including the quest for knowledge, in to 'sacred' and 'secular'.

The Unity of God implies the wholeness and inter connectedness of all creation. Qur'an and Sunna regards the seeking of knowledge (ilm) as an imperative. The main purpose of the Qur'an "To awaken in man the higher consciousness of his manifold relations with God and the universe. (1) The Prophet Mohammad himself, peace be upon him, who continually prayed; "God, grant me knowledge of the ultimate nature of things". However, all knowledge, including scientific knowledge, is, in the Islamic perspective, only a means to the end of establishing a just, compassionate order in the world. (2)

The early muslims established a civilization which made significant advances in all fields of knowledge, including science and technology. They were undoubtedly influenced by the Qur'an's emphasis upon knowledge. The Divine Name 'âlim', The Knower, All Knowing, occurs 140 times in the Qur'an (3)

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(1) See Mohammad Iqbal, *The Reconstructuion of Religious Thought in Islam*, Lahore, 1962, pp. 6-8

(2) Riffat Hassan, "Islam and Science", *the Fountain*, Apr. Jun. 1995. Nu: 10 pp. 4,7

(3) Riffat Hassan, *ibid.* p. 4

So, according to Fazlur Rahman, 'Qur'an emphasis up on the positive values of the all knowledge' (4) Therefore, Islamic knowledge is differ far from the Western knowledge and its theoretical frame which based on. Because, 'for the thinkers of classical Greece, the proper study of man was man and not the world of plants, animals insects, and stars... The Greeks had elevated human beings above animals on account of their ability to reason. The Qur'an elevates man above even 'mala'ika" (the celestial creatures) because, favoured by God, he has the unique ability to 'name' things, i.e. to form concepts. (5) This conceptual skill, enabled by a reasoning faculty, needs, according to the Qur'anic perspective, to be supplemented by knowledge of the perfectible world. Some of its most memorable passages points to the insight and wisdom to be gained by reflecting on the myriad manifestations of God's creative activity all around us. Certainly, the use of observation and reason together -upon which all science is founded- is enjoined again and again by the Qur'an. (6)

"Verily, in the creation of the earth, and succesion of night and day; and in the ships that speed through the sea with what is useful to man; and in the waters which God sends down from the sky, giving life thereby, to the earth after it has been lifeless, and in the change of the winds; and the clouds that run their apointed courses between sky and earth; (in all this) there are messages indeed for people who use their reason." (7) There are many verses about this topics in the Qur'an like this. Numerous such passages indicate that the Islamic attitude toward modern science which employ a rational and empirical method of studying naturel phenomena- called in the Qur'an the 'signs' of God, is very positive. However, while the Qur'an exhorts human being to make use of their reason (aql) to understand God's creation, it strongly condemns the absolutizing of anything human. In this regard, the attitude of Islam toward modern science differs significantly from attitudes which have prevailed in the modern west, that is, since the Enlightenment and the Industrial Revolution. Mo-

(4) Fazlur Rahman, *Islam and Modernity: Transformation of An Entellectual Tradition*, Chicago, 1982, pp. 148

(5) Qur'an, Al Bakara, 31

(6) Riffat Hassan, *Ibid*, p. 5

(7) Qur'an, Al Bakara, 164

ern science has been mystified, even deified, accorded a nearly limitless power and potential to change nature through human technology. (8)

First of all, to embark on a quest for understanding scientific development, one requires a basic understanding of the scientific enterprise what the philosophy and modus operandi of modern science is, its dependence on the nature and quality of educational system, and system of ideas and values which it generates and which in turn are vital if science is to flourish. In this context, it is imperative to realize that muslim culture is inextricably wedded to the past. Therefore, any serious analysis of the present state of science and civilization requires a deep understanding of how science entered the Islamic civilization in it for nearly five centuries. Muslims are immediately confronted by important and difficult questions:

Whether the science of the Muslims was especially islamic in character, the extent to which nurtured it, and the nature and extent of the religious opposition to it. In particular, it is important to understand the forces which led to the decline of science and learning in Islamic society after it had reached its peak millennium ago. These forces are continue to be important even today. At another level, one needs to explore the intimate connection of science with technology- with the productive forces in society, the patterns of distribution of political and economical power, and how these in turn affect patterns of technology choice an industrialization. (9)

Unless reality is comprehended, there can be no hope of constructive change. Muslims -who comprise one- fifth of all humanity- will continue to suffer an undignified and degraded existence if science and particularly a rational approach to human problems, is considered alien to Islamic culture. (10). Our task seems very difficult, but we hope in future that this immense problems are going to be solved by the muslim thinkers.

(8) Riffat Hassan, *Ibid*. P.5

(9) Pervez Hoodbhoy, *Islam and Science*, Zed Books, London and New Jersey, 1991. pp. 4-5

(10) Pervez Hoodbhoy, *Ibid*, pp: 4-5

A Qur'anic Approach to Science

Amongst us, human beings, none is completely devoid of the innate feeling- even from time to time- that there is a Greating God behind this universe. Such a feeling may be frustrated and people may be prevented from responding to it. By the teachings they get as a result of their belonging to a particular environment, their indulgence in early life and cheap pleasure naturally. The Almighty Creator should differ from us in all respect:

"And unto Him the like is not" (11)

Most of people could not be induced by this sincere feeling of the existence of Creator to follow the right path leading to Him. Thus, Allah sent prophets and Apostles- Allah's peace and blessing be upon. Them -with divine support in the form of miracles suitable to their environment, until the advent of the last of his apostles, Prophet Mohammad, who emerged after the maturity of the human mind, when the age of science was immanent. Allah supported him with the Qur'an to be an eternal Miracle. (12)

Evidently, nothing can remain forever on earth as an eternal miracle except a unique book. The inimitable elocution and teachings of such a book must be conspicuous and convincing at the all stages of civilization. The Qur'an is the only book which fulfills such conditions:

The very beginning of the revelation was an outstanding signal for the acquisition of knowledge and a forerunner of giving it, its due dignity:

"Read in the name of thy Master who created; created man from a clot; read and thy Master is the most generous; who taught by the pen; taught man what he knew not." (13)

At the different stages of the revalation the Qur'an pointed out that knowledge meant all branches of sciences. So, we can say that a great number of the Qur'anic verses are cosmological verses, revealing the signs of the All-Knowing, Almighty Creator in the universe and the close relation between nature science and the message of Islam. As known that in the beginning of mo-

(11) Qur'an, Al Shoura, 11

(12) M.G. El Fandy, Islam and Science 1, The Sumpreme Council For Islamic Affairs, Cairo, 1993, Introduction

(13) Qur'an, Al Alaq, 1-5

der science which is named as 'Renessaince, the nature and the order of traditional science had been up turned by Galileo and Kepler as well known astronoms in the Middle Age. (14)

The Holy Qur'an (and hence Islam) raises the human mind up to the highest rank, and regards it responsible for almost all human deeds whether good or evil:

"But it (the Qur'an) is clear signs in the hearts of those whom the knowledge has reached." (15)

Again, science is the product of human mind. By the adopting scientific methods we are able to uncover the hidden signs of the Creator and discover his attributes in the material universe, an outstanding step forward becoming believers. In fact, science alone is insufficient in order that one might become a proper believer. This is also for conscienc alone. For this reason, Allah did send Prophets each row and then in succession to various nations, until finally when Mohammad was sent by Allah to the whole world (the human race).

Islam regards this world as a productive farm of field for good work the sake of improving and benefitting earthly life, as well as ensuring happiness in the hereafter. Man's good or evil deeds in this life can never be lost or go in vain. Islam assures us that good work in the world is the means of securing happines in the hereafter, as well as succes in this world. In addition, Muslim's concience fears Allah's punishment, who says:

"On that Day man shall be told his former deeds and his latter. Nay, man shall be a clear proof against him, himself even though he offers his excuses." (16)

From the view point of these enterpretations it may be strongly asserted that the Islamic approach to the phenomena of science balances world and hereafter so that the triangle made up God, man and universe could be understood in a correct way. It is expect that the getting and using the science or scientific knowledge should aim at gaining the values of human being in the world and hereafter.

(14) See, the verses of Qur'an about this subject: Al-i Imran, 190; Al Ankaboot, 49; Al Jathiya, 2-5

(15) Qur'an, Al Ankaboot, 49

(16) Qur'an, Al Kiyamah, 13-15; see also: Al-i Imran, 30

So, science as an experimental and inductive exercises of man's intellect originated in the glorious years of Islam during 8 th to 13th century after Christ. No doubt that the Greek deserve the credit of a pioneer effort to stimulate learning and study of various form of knowledge including sciences.

The breakthrough achieved by muslims on the frontier of science was passed on to western European countries in rather a regrettable manner. The re-birth of science in Europe unfortunately synchronised with the birth of imperialism. This constitutes the greatest tragedy of human history as well as that of the history of science.

The growth of fundamental of sciences accompanied by equally rapid development of technology has resulted in to great change in the life and social order of mankind. It has shattered previous concept of individual and collective goodness, harmony and morality. It has exploded all systems and beliefs with which the human mind couldn't reconcile. It has destroyed such traditions and conventions which couldn't solve the host of problems arising out of rapidly envolving and advencing knowledge civilization. (17)

The Contrast Between The East and The West; Modern Science

In the medieval times, Islam's relationship to the West had been of qualitatively different nature. There were times of intimate and fruitfull collaboration, as well as times of violence and confrontation. Seven centuries of muslim rule in Spain gave to the Europeans, among other things, access to accumulated treasures of Greek and Islamic learning. But, on the other hand, the protracted and bitter confrontation during the Crusades, and later the Ottoman domination of Balkans, left on both sides a heritage of prejudice and resentment. This feeling the hostility caused the differences between the two civilizations to be magnified. Then, came the Renaissance. The collaps of the medieval feudal economy, the emergence of capitalism on a wide scale and the ensuing social ferment, gave birth to modern science in Europe some four century ago. Experimentation, quantification, prediction, and control became the paradigm of a new culture or a new science. Modern science souht, by means of a clearly defined methodology, a rational comprehension of the physical

(17) M.A.H. Qadri, "Science and Muslim World", Muslim World Leagu, Mecca, Vol:1, Nu: 1, November, 1974, pp. 42-44

universe. It brought certitude and banished doubt. This methodology derived from a coherent set of rules and criteria independent of the hierarchies of power and wealth, certainty could now be interpretable on the basis of facts that anyone could check. To establish the validity of a truth merely required following the same procedures and did not depend upon the priestly class or temporal authority of an individual. A mysterious and capricious universe could now, for the first time in human history, be understood as mechanical and orderly in which "number holds sway on the flux". To its possessors, the scientific method gave undreamed of power. In part, this power was used to understand the laws of the nature, and subsequently to create new technologies. But, in part, science became the weapon with which less technologically developed peoples around the world were to be systematically subjugated and colonized. (18) In this period, faced with the brutal onslaught of 18th century mercantile imperialism, traditional Muslim society stood defenceless. This inferior position of Muslim has been, even today, continued.

Science is, here to stay, the future of humanity and science inextricably tied together. Upon science, but guided by universal moral and religious principles, depends the continuation of civilized human existence on earth. The past tells us so.

As a Tragedy Modern Science and Its Paradigm

The modern science has failed to answer the following three vital questions: "Why technology", "To do What", "To prevent what?". The three questions raised above are in fact related to the basic and larger consideration of "Purpose", "Goal", and "Dangers" of mankind. This consideration should be analysed in the context of individual as well as society.

Technology is basically a tool or a practical application of scientific knowledge and is, therefore, rooted in fundamental as well as applied sciences. Therefore it should be considered as a part of science itself and should form a fragment of larger policy namely "The Science Policy". Science is the exploration of all facts and acquisition of all precise and verified knowledge. It is deeply concerned with the nature, purpose and goal of mankind. It is regrettable

(18) Pervez Hoodbhoy, *ibid*, p. 3

that whereas man has engaged himself with the discovery and conquest of nature, he has ignored the efforts to find out his own purpose and to define his goal. (19)

It is thus that today frustration, discontent and darkness loom heavy in spite of plenty of physical comforts and pleasures. The soul of mankind is aching in anguish.

Technical and applied sciences together with the study of fundamental science in a planned manner should be developed in every new born country. Technology, according to Islamic concept, should be related to the purpose of human society or the primary need of man, viz, food, housing, clothing, healthy, transport and other amenities of life. Its social role is to achieve a greater understanding and integration of human societies. Equally important is its functioning as an instrument of increasing and acquiring all forms of learning as well as of increasing the depth and breath of scientific knowledge. In fact technology explores facts for knowing "How" and "What". (20)

As such there is ever increasing importance of technology as long as mankind exist as a social community.

The second question "to do what" is directly related to the purpose and goal of mankind. It again is a part of a larger question 'why science' or 'knowledge'. The aspiration of man from the beginning of civilization has been to discover 'the Ultimate Reality' or to know "what" and "why" for. Science will be involved in a restless effort of man, until these two facts are known. This implies the discovery of nature around man and his universe. The keennes to explore 'what' basically arises from an urge to understand 'why for' or the goal of mankind has been conceived in the Greek as well as in Western philosophy as achieving a 'Welfare Society' or as American calls it a "Greater Society". In the Marxist societies it is called, also, "classless society" or "comunal order". Because, in these societies, scientific paradigms and ideological jargons have been involved in to each other. (21)

(19) M.A.H. Qadri, p. 43

(20) M.A.H. Qadri, *ibid.* p. 43

(21) M.A.H. Qadri, *ibid.* p.43-44; In detail, see, Causa Lecture Manual, Causa inst. Newyork, 1985; See, also, fernand Braudel, *Capitalism and Material life*, (translate in to Turkish: Mustafa Özel) Ağaç Yay., Ist., 1191.

In either case it is nowhere and never called a 'Noble Society' with which Islam is intensively concerned. The concept of 'The Noble Society' is far different from a welfare or greater and marxist society.

Conclusion: Science / civilization and Noble Society

The noble society, in the view point of Islam, will have to be explained the muslim thinkers for the benefit of every serious minded person to understand and work for it. However, it can broadly be defined as a society giving man and human community, satisfaction of mind and soul, a keenness to defend justice and peace and an urge for selfless service for all mankind. It will create an effort to lead man towards love, sincerity and wisdom as well as towards a will to salvage mankind from hatred and selfish interest. How will this noble society be achieved is a challenge to the world of Islam. What civilization and science can prevent? This is less difficult question to answer. We are aware of the looming disasters and impending catastrophies, in addition to the naturel calamities like epidemics, floods and famines. The dangers inherent in human social development are 'decay' and 'destruction'. (22)

While decay is an organic disease resulting from growth or over-specialisation, destruction is a man made danger. Destruction at the moment is a far greater danger than decay in human society.

Science and civilization have given to man instruments highly sophisticated in order to destroy each other. In the hand of aggressors, they are far more destructive and will be indiscriminately used. As you know, in recent years the gas of 'sarin' used to kill people in Japan is the clearest evidence of the deathly technological development peace is far more needed today than at any time and there is no way to achieve peace other than to achieve a noble society of mankind. The noble society when and where created will be based on the cardinal principles and fundamental virtues of Islam and Islam alone will orientate all scientific and tecnical effort to constructive purposes.

In conclusion, the modern scientific method, or scheme, is based originally on careful obsetvation, description and measurement, using our senses, notably vision. When senses fail to detect a phenomenon we use our apparatus,

or our tools, as we do when studying the magnetic field for example. This means that modern science concern apperant things only, and our minds have been prepossessed by various problems on Earth and by the laws of life, and, there fore, stopped at the limits of material life. (23)

Qur'an says in this respect:

"But most people understand not. They know but the apparent (things) in the life of this world, but of the hereafter they are heedless" (24)

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(23) M.G. Al Fandy, İbid (Book 11) p.30

(24) Qur'an, Al Fourn, 6-7