

# **ISLAMIZING THE NATURAL SCIENCES: A PROCESS**

**BY**

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The fundamental disconnect between contemporary science, technologies and the transcendental reality God has robbed the scientific community of all values and stripped it of essential humanness. (Ataur-ur-Rahman (1981:172). Moreover, the disenchantment of nature has led both secularists and humanists to the cultivation of a scientific attitude which, according to them means the rejection of dogma, questioning of absolutes and, instead of faith, sole reliance on reason. Reason must be given complete freedom and not to be guided by revelation. To tackle the challenge posed by secularization of knowledge by the West, series of conferences and seminars on the Islamization of knowledge project have been and are being held in Muslim Countries.

In this paper attempt is made to discuss the process of Islamizing the natural sciences. The paper is divided into five parts namely viz:

1. Definition of Terms
2. Methods of Knowledge in Islam
3. The Scientific Method
4. Islamizing the Natural Sciences and
5. Conclusion

## **I. Definition of Terms**

The word “science” refers to all the knowledge man has acquired in different places and at all times, arranged according to subject matter. The term “natural science” is used to refer to experimental study of all that is within the reach of senses and intellect in the world (for example, matter, energy, living things and natural phenomena). This is usually carried out through observation, experimentation, deduction and conclusion, in an attempt to discover the characteristics of matter, energy and living things, and to classify all these and discover the laws governing them.

This, natural science is concerned with the study of those objects and phenomena that can be verified either by tangible experiment or sense perception.

The natural science can be broadly classified into:

- i. Biological sciences, e.g. Zoology, Botany, Anatomy, etc.
- ii. Physical sciences e.g. Chemistry, Physics, Geology etc.

The natural sciences are sometime divided into pure natural sciences (Hiology, Chemistry, Physics etc.) and applied natural sciences (Medicine, Pharmacology, Engineering etc). (**Manual on Islamization of Knowledge**, 2010:33).

Islamization of knowledge simply means “an attempt to reorient and recast knowledge to conform to the Islamic belief system and world view” (Shehu, 1998). It is the total transformation of knowledge based on a methodology and epistemology that are fully derived from the Qu’ran and **Sunnah**.

Next is the discussion of methods of knowledge in Islam.

## II. Method of Knowledge in Islam

The Qur’an recognizes three levels of perception. These are the spiritual, intellectual and sensory levels. According to Al-Alwani (1995) they constitute the major methodological components of Islamic epistemology. The organs on which the three levels are represented are the sensory organs.

- i. The spiritual level deals with revelation (e.g., inspiration, intuition and telepathy). Revelation par excellence is otherwise known as **haqq al-yaqin** (absolute and experienced certainty). (Qur’an, 56:95).
- ii. The intellectual level deals with cognitive processes like thinking, reflection, meditation, contemplation and understanding or discernment.

This is otherwise known as **‘ilm al-yaqin** (cognitive certainty)  
Qur’an 102:5).

- iii. The sensory level deals with things like observation, empirical studies and experimentation. This is otherwise known as **‘ayn al yaqin** (certainty of sight) (Qur’an 102:7)

Another aspect of the method of knowledge in Islam is the method followed by **hadith** scholars and scientists: collecting, authenticating, recording and reporting all information about the Prophet Muhammad and his Companions. The foundations of these scholarly endeavours (criticality in research) are in the Qur’an. (2:170, 247; 53:27-28; 39:18; 93:7; 29:49 etc).

## III. The Scientific Method

The natural sciences are characterized by a special method of inquiry known as scientific method. It involves observation, hypothesis, experimentation, recording, inference, deduction, conclusion and formulation of a theory in that order.

The scientific method of inquiry is founded on the philosophy of positivism or empiricism. According to this philosophy every place of knowledge is subject to

tangible experiment. This definition of scientific knowledge has been prevalent for centuries and has been adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO). It has been used as a means of deciding what knowledge is scientific and what is not. By the adoption of this philosophy, revelation was rejected as a source of knowledge, and all branches of knowledge which were based on revelation were excluded from the field of scientific knowledge and were hence regarded as unscientific. As a result, the empirical method was considered to be the only means of gaining scientific knowledge. Man was regarded as a mass of biological substances. Soul was another but material energy. Experiments were carried out on animals in an attempt to define laws that could be applied to man as well as in the areas of behaviour, responses, reaction, influence, obedience, refusal, and ways of meeting material and other needs.

By limiting inquiry to the tangible universe only, the natural science has imposed on itself a number of limitations:

1. There are things in the universe which cannot be felt by human senses directly or indirectly. These can be detected, however, by the existence of logical evidence which is sufficient to prove their existence.
2. By man's limited existence in space and time all his conclusions are considered "relative" even the ones based on direct observation and experimentation.
3. Due to the continuous division and subdivision, of science, a scientist is obliged to specialize in a very small sector of the natural science in a very narrow specialization. This has made the results of experimental science very partial, and because it is partial, its information cannot answer man's comprehensive inquiries.

Scientific method as a system of inquiry is a product of Muslim civilization. But natural science, when moved from Islamic Andalusia to Europe, has developed in an atmosphere of mutual hostility between the Christian clergy and the science community. As a result of this, modern science has acquired a negative attitude toward religion and has limited its course and style to that direction. (**Manual on Islamization of Knowledge** – 2010: 34f).

#### **I.V. Islamizing The Natural Sciences**

In order to meet the **challenges of modern science and cast its mould in the crucible of Islam**, Muslim philosophers of science have taken a critical look at the four structural components of science (Osman Bakar, 2003:34ff).

- First component consists of concepts, facts (data) theories, laws and the logical relationships that exist among them. It is the knowledge content of the science in question, and this can be proved.
- Second component: consists of basic premises and assumptions (epistemological foundations which cannot be proved, (i.e. the nature and reality of the object of study and

its ontological status). These cannot be proved, but their truths may be established in another science or metascience.

- Third component relates to methods of study which vary according to the nature of study: perhaps logic is common to all the sciences. The core method of any science consists of the following: gathering of data for analysis, theory formation, test and verification of truth claims in hypothesis, theories and laws.

Diversification of sources of data is allowed in Islam to even include divinely revealed sources. A science may employ more than one method. For example, Ibn al-Haytham (d.430/1039) used a combination of mathematical and physical methods in his **The Book of Optics**, the best Muslim work on optics.

- Fourth component: concerns the goals sought to be achieved by the science. The main goal of a science is to discover that aspect of reality pertaining to its object of reality. It is to arrive at a complete knowledge of that domain of reality with scientific certainty ('ilm al-yaqin).

Given the fact that the structural division of science pertains generally to epistemological issues, it is most appropriate to relate these divisions to the dimension of the religion of Islam dealing with knowledge. This means we are here interested in exploring Islam's inner resources that would enable us to shape them into a universal vision of "Islam as a way of knowledge". *Iman* as summarized in the six fundamental articles of faith and as understood and interpreted **at the level of Ihsan** (virtuous conduct) is precisely the domain that serves as the epistemological foundation of universal sciences like metaphysics, theology, cosmology, psychology and eschatology.

The Islamic worldview in which science is to be cultivated and pursued "is one that is fully informed by these universal sciences". If we would like to see the four structural components of science to be in harmony with Islam, then we have to make sure that they have been **shaped by the relevant ideas embodied in those sciences** (i.e. metaphysics, theology, cosmology, psychology and eschatology).

It is also quite clear why the Islamic intellectual tradition is important for our inspiration, consultation and guidance when it comes to the formulation of the relationships between science and Islam. The experience of our predecessors in using Islam's inner resources and developing theology, metaphysics, cosmology, psychology and eschatology in conformity with religion is inevitable to us. Needless to say, there is always room for improvements in intellectual matters like these.

As for the second structural component of science which consists of the basic premises or the foundational principles, it is important to bring Islam's epistemological resources to bear on it. This is because **we do know** that, on the basis of their nature and epistemic status, the

premises of a science may not belong to the category of real knowledge or their truths may be doubtful. As maintained by Muslim philosophers of science, all premises may be reduced ultimately to the following four categories:

- ❖ The category of received opinions or beliefs
- ❖ The category of generally accepted opinions and beliefs
- ❖ The category of sensory knowledge or empirical data based on sense perceptions, and
- ❖ The category of intuitively accepted intellectual principles

In their view, premises in the fourth category are necessarily true and certain and therefore completely acceptable. Also acceptable are new premises derived from them in accordance with the rules of logic. In other words, the truths of rational propositions based on intuition and logic are affirmed and their suitability as premises of a science unquestionable. Where the premises may be questionable is in the other three categories. It is in the nature of beliefs that they may be true or false. It is therefore, necessary to scrutinize premises belonging to the first two categories to ensure that these do not contradict Islamic doctrines. The beliefs and opinions taken as premises, whether these originate from religious sources other than Islam, or happen to be generally accepted in a certain culture, should be replaced, wherever possible, with explicit Islamic doctrines even if they are not contrary to Islam. The implication here is that Islam doctrines may provide a much richer source of basic premises for the sciences even when we can accept those beliefs coming from other religious traditions.

As for the reliability of sensory knowledge or data based on sense perceptions to be used as premises, the issues involved need to be well understood. We may say that for the particular purpose at hand, by itself, such kind of knowledge is legitimate and reliable only in a limited context. The extent of its legitimacy and reliability varies with the nature of the subject matter of the science in which it is sought to be used. Clearly, empirically derived premises are more relevant to empirical sciences like physics and chemistry. But in the case of those science in which our approach to the subject matter would involve elements of believes, conjecture and other more subjective considerations to a great extent, the use of empirical data alone would be inadequate. The required premises need to be formulated on the combined basis of empirical and rational knowledge.

Furthermore, there are sciences in which we have to depend solely on rational or intellectual principles for our premises. It is clear to us that **traditional Islamic** discipline such as epistemology, metaphysics, theology, cosmology, and psychology have a very important role to play in any intellectual project to formulate conceptual relationships between science and Islam.

Their main role would be to furnish us with rational doctrines that are scientifically justifiable to be used as premises of the various sciences. The cosmological doctrines are perhaps the most needed in the task of laying the foundations of the physical and biological sciences. Premises of the life sciences need to be based on the traditional conceptions of

such central ideas as soul and life pertaining to all living things. In the cognitive sciences, among other things, we have to enlist the help of traditional cognitive psychology in clarifying for us the multi-layered meaning of intelligence and its whole range of activities. The consideration of these traditional doctrines for their roles as premises of the sciences in no way nullifies the roles of empirical investigations. By all means, let us resort to the empirical investigations as well, wherever possible and pertinent.

Issues of methodology, the third structural component of science, are no less important in their need to be treated in the Islamic perspective. At the methodological level, the relationship between science and Islam would involve a general discussion of how the religion views the different sources of knowledge accessible to humankind. The most fundamental question that needs to be asked and answered in this matter is how can we humans gain knowledge of reality either in its partial or total aspects? This question has been answered in the past in different ways by Muslim scholars. On the basis of their answers, we come to the conclusion that we have to develop an Islamic cognitive psychology which is at once traditional and contemporary. In this psychology, we would synthesize the traditional exposition of the hierarchy of human faculties of knowing, corresponding to the hierarchy of the cosmos, with modern discoveries in the subject. We then need to apply this newly formulated Islamic cognitive psychology to the specific sciences to determine the methods of study that are most appropriate for each of them.

As for the last structural component, the aim of science to know an aspect of reality need to be related to the more general **Islamic perspective on the purpose of human existence**, which is to gain knowledge of reality. It is through the cultivation of the reality of the sciences that human beings find themselves in the best position of know reality.

The *Shari'ah* is the main source of Islam's value-system. Thus, the applications of science of Muslim society and culture should be guided by the *Shari'ah's* hierarchy of value of human acts and objects. In this value-system, every human act must fall into one of the following five categories:

- Obligatory (wajib);
- Meritorious or recommended (mandub)
- Forbidden (haram)
- Reprehensible (makruh)
- Indifferent (mubah)

Clearly, in the domain of applications of science and technology, there is an urgent need to categorize them in the light of the above hierarchy. Given the present situation in Muslim societies, the task of categorizing contemporary scientific and technological applications has to be jointly undertaken by scholars of Islamic law and Muslim scientists. To be given top priority are legal-ethical evaluations of applications in fields like genetic engineering, technologies used to produce weapons of mass destructions, and food and medical technology.

## V. Conclusion

In the foregoing paragraphs, we have been able to give the definitions of key terms in this paper AND the major methodological components of Islamic epistemology and the Scientific Method were discussed. Also examined, is **the process of Islamizing the Natural Sciences**.

It can be inferred from this study that traditional Muslim Scholars had an integrated worldview in their pursuit and cultivation of the sciences. This was because they based their investigations on the two ‘revelations’ from Allah (swt) on the Phenomenal world and the Scriptural inspirations. Hence there was harmony and balance in their scientific contributions to the welfare of the universe and humanity.

By limiting it inquiry to the tangible universe only, without recourse to **wahi** (Revelation) modern science has brought in its trail heightened concern for ethics (in science), felt strongly in the areas of genetic research. Biotechnology and ecology. Islamization of knowledge project must therefore be vigorously pursued and implemented. The experience of our predecessors in using Islam’s inner resources to develop universal sciences such as theology, metaphysics, cosmology, psychology and eschatology in conformity with religion is inevitable to us.

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