The Importance of a Value System in Science

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Abstract

A value system refers to all implicit qualitative characteristics within man and society, which include faith, morals, culture, thought and psychology.This system has influenced science for so long.This article discusses the importance of a value system in science. This study adopts a content analysis and hermeneutic approach. Study findings show four points forthe importance of a value system in science. First, science needs a value system because science and religion are harmoniously interrelated.Second, a value system is needed in science to overcome problems of humanity, nature and society.Third, it is necessary to have a value system in science to lead towards a better life.Fourth, a value system in science ensures the growth and development of science in line with the development of man and nature.

Key words: Value system, science, Islamic science, science and religion

What Is A Value System?

According to Mat Rofa Ismail (2006), a value system refers to all qualitative characteristics implicit in man and society, which includes faith, morals, culture, thought and psychology. This system has influenced science for a long time. If we were to give a date to mark its beginning, Oswald Spengler's study published in the year 1932 regarding the influence of culture in mathematics may be linked to its basis.Alternatively, its date of commencement may also be associated with a study by Thomas S. Kuhn published in the year 1962 concerning a dispute of the view that science is neutral. In subsequent years, the opinion that science should have a value system has been supported by many scholars.Ziauddin Sardar (1992), for example, supports this idea by submitting that a science and technology policy should also reflect the culture of a nation.Glyn Ford (1984) in his article "The re-birth of Islamic science" expressed the view that science and culture are integrated.In another work,ZiauddinSardar (1992) linked the close relation between Chinese science and Islamic science with their respective cultures.

In the context of research in Malaysia, some local scholars are also found to support the same idea. Shaharir Mohamad Zain and Abdul Latif Samian (1989), for example, touched on the influence of group culture on mathematics. Shaharir (1990) in his Inaugural Lecture as Professor of National University of Malaysia (UKM) discussed the symbiosis between culture and mathematical sciencewhich occurs from time to time.The influence of culture on mathematics is re-mentioned by Shaharir in some of his articles such as "Kritikan Awal kepada Premis Ilmu Sains Tabii" (1991) and "Pengaruh Budaya ke atas Matematik" (1992). The same writer later reiterated his stand on the matter, but this time without specifying mathematics in his discussion.Instead, his writing was rather more general when dealing with integration of science and culture. His opinion is contained in his article "Towards a quantum leap in the development of Islamic science in Malaysia" (1998), and in his book*Pengenalan Sejarah dan Falsafah Sains*(2000), he presents the sequence of the emergingviewson the bond between science and culture. Apart from Shaharir and Abdul Latif, Azizan Baharuddin (2003) also shares the same opinion that culture has an influence on science through his article "Kesan Globalisasi terhadap Budaya Setempat").

Basically, science was never separate from a value system. Mat Rofa Ismail (2006) explains that it is possible that duringcertain intervals of time there were scientists who reject the bond of a value system with science and consider science as independent of values. However, this only occurred in a short interval of time during the 19th Century AD. Thus, it is only a small segment in the whole development of science.

The importance of a value System in Science

A value system is necessary in science. It has its own importance because science and religion are harmoniously interrelated.Its importance can be viewed in terms of overcoming problems of humanity, nature and society, to lead man to a better life and to ensure that the growth and development of science is in line with the development of man and nature.

A Value System Is Necessary in Science Because Science and Religion are Harmoniously Interrelated

The harmonious relation between science and religion is not odd,especially more so in the form as described byAzizan (1995; 2006) in his opinion on the form of relation between science and religion.In fact, the integration between the two is highlighted by the sameness of the object focused on by both science and religion, namely, nature.Religion makes nature an object for human scrutiny to better understand the signs of Allah's dominion. Nature is also made the object of study by science (Endang, 1982). This means that all research in science is regarding nature and its phenomena including man who resides in nature. Thus it is very difficult to see the line of separationbetween science and religion when both study and scrutinise the same object.

This complementary relation is even more evident in terms of the methodology of both science and religion.Religion commands man to read nature as in observing and scrutinising it so that man may know and be convinced God's dominion and thereby raise hislevel of piety towards God. In fact, Zakaria Awang Soh (1990) noted more than 550 verses in al-Quran which urge man to reflect, conduct scrutiny and observation of nature. By doing so, man would in fact be doing scientific activities, for science uses the same methodology of observation, scrutiny and experimentation on nature as the object of its study.Thus man would be simultaneously doing both scientific and religious activity.This goes to show that science and religion are not only integrated but that there is no line of separation between them.In fact, science is seen as enhancing understanding of religion. This idea has been explained by Azizan (2006) in his view on the complementary relationship between science and religion. When man scrutinises nature, it will increase his understanding of the powers and greatness of God and thus increase his level of piety.

A Value System is Necessary in Science to Overcome Problems of Humanity, Nature and Society

Historically, the objective of science is to give a simple explanation on relationships between empirical phenomena of nature (Sardar, 1992).Through science, man will be better able to understand surrounding nature not just as a source of materials such as food, drink, tools, communication, transport and ornaments, but in fact, nature functions as the object of man's intellectual development and as agent of his spiritual development (Khalijah, 1997). Thismatter is reinforced by the view put forward by Abdul Latif (1992) who states that science is perceived as a knowledge giant capable of solving everything, and providing the answer for all issues in life.

A Value System is Necessary in Science to Lead towards a Better Life

Even though between science and culture there are differences in values which influence the worldview of a society and nation, it is still emphasized that science is in need of values capable of directing man's life for the good.For example, the Chinese worldview based on Confucianism gives priority to the value of refined human relations along with the recognition of 'supernatural forces'.According to Sardar (1992) in his book*Argument of Islamic Science*, the key characteristic of Chinese society without taking into account status, position, educational background and gender, is the requirement alike for all to learn good values in life.The Chinese culture emphasizes achieving perfection in life, a person must attempt to obtain the best he can possibly accomplish.Besides this, he must be happy and grateful for what he has. In addition, the ideology held and practised by the Chinese is applying good values which will shape qualities of justice, spirit of tolerance, goodwill, placing public interest above one's own and putting aside one's ego.The culture and thought applied in this way of life can shape the valuesin science from the social perception or perception of humanity.

This shows that Chinese thought emphasizes on man's interrelation with nature as well as between the individual with society (Sardar, 1992). Values of belief in religion practised are necessary to avoid human existence from being threatened with matters which may destroy not only a nation but can even cause world destruction. Likewise, Greek thought is that a good life may be attained through knowledge of human goals or human existence. Aristotle's (384-322 BC)view is that the main function of man in hoping for good is through applying the practice ofthinking well. One of the works which discusses Greekphilosophers of nature and science is the writing of Sa'id al-Andalusi who emphasizes on how Greek scientists, at least in the early stage, received instruction and guidance from Prophets. For example, in*Tabaqat al-Umam* by Sa'id al-Andalusi, is stated among other things: *Empedokel* (one of the pre-Socratic Greek philosophers*) lived during the time of Prophet David pbuh.…….… he learnt science from Luqman al-Hakim in Syria* (Hairudin, 1992).

Further, Japanese ideologies and culture are highlighted as enabling the Japanese to effectively build their civilization. The cultural values practised by the Japanese society include humanitarianism (*aasake*),concord (*wa*), fulfilling promises and discipline. These values are strongly inculcated and become more cohesive as and when the Japanese are imbued with a spirit of love for knowledge through upholding it, respect for education and an attitude of deep curiosity towards information. Although ideology and philosophy of life clearly differ among the nations of the world such as Greek, Chinese, Indian and Japanese, yet diversity in worldviews has resulted in cultures, values and social norms which were able to trigger growth, research and encounters of knowledge civilizations for mankind.Each nation's positive characteristics and philosophy of natural science gave life to values in science and enabled civilizations to grow.

A Value System is Necessary in Science to Ensure the Growth and Development of Science is in Tandem with Development of Human And Nature

Islamic science has its own identity. This identity is seen in its epistemology which gives an impression of science and its goals as found in the methodswhich influence the manner of practice and content of science.The philosophy of Islamic science generally emphasizes on experience and reality and encourages various ways and methods to learn and study the world of nature. The concept of science development based on Islam incorporates almost every form of knowledge starting from pure observation to the knowledge of metaphysics.Thus Islam emphasizes that knowledge can be gained from revealed knowledge and intellect, from observation and also intuition, from tradition and also from speculative theory.However, despite various ways to learn the world of nature, the truth of revelation is the key pillar of Islamic science.This pillar explicates to the universal world, that no matter how far the direction of science development, the values of faith and lawstill may not be denied.As such, connecting science to a value system is necessary and important to ensure the growth and development of science is in tandem with the development of man and nature because it steers man to create rights and justice for the world of nature and all that are contained in it.

In this context, the importance of values in science encompasses the physical and spiritual which are inseparable, because the goal is not just for well-being in this world, but extends to the afterlife. These values are interdependent and there is no conflict between the two dimensions. Mat Rofa in his work entitled*Falsafah Sains* (2006) submits his view on this issue by stating that the value system has been eroded for so long from science even though the natural sciences which began in the Greek philosophical thought were laden with values. In the process of crossing civilizations and cultures, the face of science, as a philosophical tool to search for truth, had been altered.Finally, the ethics andpsychology aspect was separated from science. Nasr's opinion, expressed earlier, is in line with this view. Nasr (1970) mentioned that scientific works introduced by Ibn Sina (980-1037AD) and Ibn Rusyd (1126-1198AD), which entered the world of Europe and became scholarly references giving inspiration and driving Europe's progress, were sciences laden with spiritual values.

This fact needs to be acknowledged by man without differentiating nation or race so as to avoid development of science becoming secular. That secularization of science rapidly beganwhen scientific achievements conflicted with the Christian Church dogmas in the 15th Century AD deserves serious attention so that it does not continue to cause a value-laden science to be stripped of values.Indeed, science as knowledge which grasps the reality of divine truth has been altered to become an agent purely for the creation of technology (Mat Rofa, 2006). On the contrary, development of science based on spiritual values and anchored in religion, will perfect the objectives of science more. Values in science had existed in old civilizations of China, Greece, India and Islam.

Even the Japanese society had created their own civilization laden with human values, by Japan-izing knowledge beginning from the Meiji era.Regardless of which nation and society, all religions will endeavour to seek their own doctrines on science.Science discoveries and theories which conflict with religious precepts embraced will be opposed. The science values found in a society depend on the way a society manages them, the superiority of values which shape the political and social structure, the manner of overcoming material problems and the way a society practices its cultural life.The differences in these will influence the worldview and values of a society. The need for values in science and life is described by Sardar (1992) who states that research and intellectual exploration will be futile if they are not supported by the requirements of religion and the world.Further, according to him, advanced scientific knowledge is like the strong effect of medication.It can help a person with a strong immunity but may overwhelm and destroy those weak in immunity.Like science, it can enrich and perfect the intellect of the strong-minded but may damage the weak.The true science with perfect values will reveal the ignorance of one regarding the attributes of Allah SWT.

This view is consistent with the opinion submitted by Osman (1997)in his article entitled "The Positive Role of Islamic values in the Development of Science and Technology" in which he states that the value system of Islam covers the intellectual and rational values which promote scientific progress as well as ethical and moral values which prevent abuse of science.These values are universal, which means they are generally acceptable to all adherents of various faiths.In fact, the history of Islam itself is clear proof of how this value system is internalized in the development of science and human life.

Conclusion

A value system has its own importance in science. This indirectly confirms that a value system is essential in science, not only in Islamic science but in the science of any other civilization as well.

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