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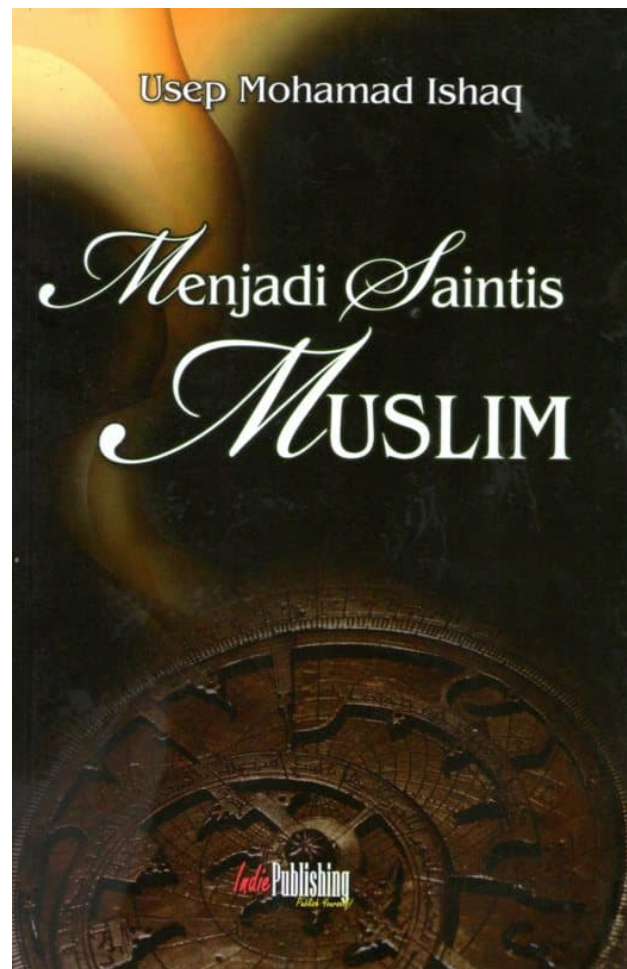
AUTHOR PROFILE

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Scientist and scholars have been discussing the relationship between science and religion. Various questions arise about this, such as “is religion compatible with science or against it?” or “is the Holy Book in line with or against science?” The discussion and the discourse on the relationship between the two are not from the Islamic tradition, because Islam already has a very clear concept on this matter. These questions arise in the world of Western scientists due to their confusion. Their confusion has then spread among the Islamic scientists, especially those who do not have a clear scientific framework.

An example of this confusion is their lack of understanding of the meaning of science. They understand science is limited only to things



that are empirical and mathematical. Sometimes they are even unable to distinguish science from technology. More than that, the study of science is diverted from its original purpose as an attempt to understand reality (truth), to serving industry or fulfilling curiosity. This kind of phenomenon is more evident with the number of scientists who have lost the meaning of scientific concepts, such as science, nature, verses, reality, truth, existence, humans, even God. The impact of all this is the emergence of new problems as a result of misguided scientific studies. When studying science, these scientists refuse to involve elements of religion and morals.

They reject discourse of integrating science and religion-morals, stating that there is no correlation between science and religion-morals. However, when they see moral decline among students, they are shocked without understanding the root of the problem. When the destruction of nature is rampant due to the

actions of corporations, scientists close their eyes and do not understand the root of the problem. They may even become accomplices of the corporation. This makes science walk aimlessly, leading to who can pay them more. Such phenomenon is common these days.

Efforts to improve the above with the discourse on the Islamization of science are often misinterpreted by them. The Islamization of science is considered only as a justification and labeling, and some even consider it an apologetic effort for the backwardness currently experienced by Muslims. This is bound to happen because Islamic scientists in general are disconnected or cut off from their traditions and scholarly identities. Many Islamic scientists do not have a clear picture of the history of science of their predecessors, let alone knowing and being proud of the history of civilization of its predecessors as one of the keys to the glory of civilization today. The West, which is currently considered an advanced civilization, keep on digging through the history of their predecessor civilization, namely Greco-Roman.

In the introduction of this book, the author tries to explain the discourse that is developing in the world of scientists and religion regarding the relationship between science and religion. The culture of science is indeed a prerequisite for the glory of a civilization, but seeing the phenomena above, the writer feels compelled to explain the real concept of science in Islam and how a Muslim should study science. This is important because good knowledge in Islam is the one that not only fulfills the thirst of the world, but also provides benefits to self and mankind. With science, one is getting closer to the Creator and with knowledge, religion and morals will be better.

The author then raises the meaning of science and its position in an Islamic perspective. This discussion is very interesting because readers are invited to explore the meaning of science and its development. Etymologically as explained by the author, both science and knowledge have the same meaning. Science comes from Arabic (*'alima-ya'lamu-'ilman*), while science comes from Greek (*scientia*). This

means that something is said to be science if it is believed to be true and can be proven by reasoning or has reasons that can prove it. This definition should apply to all fields of science.

The author also explains the shift in the meaning of science that becomes narrower due to the development of empiricism and rationalism in the West. Science validity relies merely on the rationale and the five senses. The induction method has become very prominent and in line with the emergence of positivism. With a definition like this, religion according to the positivism view is not part of science, because there are things in religion that cannot be proven rationally and empirically. Consequently, religious scriptures in the Western society have no meaning because they do not fulfill scientific requirements in proving their truth. .

The close relationship between science and nature is well explained by the author. The relationship between the two can be seen from the side of language (Arabic). Knowledge comes from the word *'alima-ya'lamu-'ilman*, as well as nature comes from the word *'alam*. In the Islamic perspective, therefore, if science is interpreted as the correct knowledge of nature, its history has been around since Allah taught Prophet Adam about the names and properties of things. This is mentioned in QS. Al Baqarah 33: "And He taught Adam the names of all objects". In that case, it is called the word *'allama* which means teaching where it has the same original word as science and nature. In the Islamic concept, this universe is a sign of the power of Allah, namely the One who created it. In Arabic the sign can be called a verse or *'alamah*. So the words science, nature and signs (*'alamah*) have the same root. Therefore, the study of science in Islam cannot negate the role of the Creator.

The author affirms the explanation of the actual natural science term. Natural science is called *Ilmu at-tabi'ah*, not *fiziya* as used in modern Arabic, which does not have any concept in Islam except the concept that has been brought by the West. *At-tabi'ah* literally means "sure", "creation", "stamp", meaning that this universe is something that was created with definite and regular rules. Since the term *fiziya* or physics

does not have an Islamic concept in it, this has the consequence of secularizing natural science.

The concrete example described by the author is about the meaning of “natural law”. In the Islamic concept, “natural law” (cause and effect) is the *‘adah* (habit) law of Allah’s deeds which do not have to be like that. This means that in the cause and effect that occurs in nature, the role of the Creator is not negated. Allah Most Willed is not to carry out this habit. An example of this is the fire that did not burn Prophet Ibrahim. Causally, the fire should have burnt Prophet Ibrahim, but Allah is the Almighty to exempt that customary law so that the fire loses its heat and fails to burn Prophet Ibrahim. Such a concept does not exist in physics/*fiziya*, which conceptually originates from the West.

As for the relation between human and natural sciences, the author explains that in Islam humans are the most noble creatures, because Allah gives knowledge to them. This means that the knowledge possessed by humans comes from Allah. Therefore, we cannot disregard the role of the Creator in exploring various kinds of knowledge.

Then the authors explain the concept of classification of science in Islam. Science is classified and sorted in a certain hierarchy. This shows *adab* in science itself. The classification is the science of *fardhu ‘ain* and *fardhu kifayah*. The science of *fardhu ‘ain* is a knowledge that must be known by every Muslim. This is related to the main matters of religion, such as matters of *halal* and *haram*, pillars of Islam, and pillars of faith.

The science of *fardhu kifayah* is a science that must be known by some Muslims. The science of *fardhu kifayah* is divided into two, *syar’iyyah* knowledge, namely the deeper religious sciences such as *musthalah hadith*, *ushul tafsir*, *ushul fiqh* and so on and non-religious sciences such as engineering, medicine, science and so on. This discussion is so interesting that a Muslim can understand which knowledge must be prioritized.

In addition, the author also explains the channels of knowledge (epistemology) according to the Islamic concept. According to Western

epistemology, something is said to be science if it can be proven by one of the channels, namely the five senses (empiric) and reason (rationale), meaning that if something cannot be proven by either of the two, then it is not science. Hence religion is not science, because it cannot be proven both empirically and rationally. While in Islam, the channel of knowledge is not only reason and five senses, but also revelation that explains unseen things. Revelation is one of the channels of knowledge in natural science, for example, there are verses in the Koran relating to the universe, which are considered as a truth that must be believed.

In connection with the discussion of science in the Qur’an, the author explains the verses about the universe in the Qur’an. Starting with the number of verses reaching 1,108, the author shows that the Qur’an has a special interest in observing and reflecting on the creation of the universe and the majesty of the Creator. The author regrets that many Muslim scientists do not understand this. They are only engrossed in researching natural phenomena rather than learning lessons and clues, as well as the meanings behind them. Even though the observed universe is symbols, signs and clues in order to understand the meaning behind it all.

The impact of studying the universe should be increasingly submitting to the Creator and exalting Him, which then increases in obedience to Him. This is what distinguishes Muslim scientists from and others. This argument is based on Allah’s explanation that in the creation of the heavens and the earth, there is a sign of the greatness of Allah (QS. Al-Baqarah: 190). So a Muslim scientist when conducting studies and research on nature should increasingly feel the greatness of Allah. On the contrary, science now gives the opposite result, as science is misused to do damage to nature. Nature is only used as an object of massive exploitation by scientists, engineers, and corporations to get the maximum profit. This is contrary to the spiritual life of Muslim scientists. In connection with this, the author quotes the words of Syed Muhammad Naquib al-Attas in *Islam and Secularism* (1981) “Science for the first time in history has brought

chaos to the three kingdoms of nature, namely animals, plants, and minerals". The author completes his review by taking several credible references to the work of great scientists. For example, *Cosmos and Natural Order in the Thematic Encyclopedia of Islamic Spirituality* by Sayyed Hossein Nasr (2003).

After explaining science in the Qur'an, the writer then explained the meaning of science according to Islam. Science according to Islam is the definition of reality. So science is not only concerned with things that can be sensed as understood by the West, but also includes something that cannot be sensed. This means that Islamic science is based on philosophy, either its ontology, epistemology, or axiology. Science works within Islamic framework. Therefore, science in Islam cannot be reduced to empirical science only. For example, religion includes science, as there are things that must be accepted as reality of truth. The author also explains that science in the view of Islam is not neutral as it is in the Western view. Western science works within the framework of positivism and empiricism, which is not free from philosophical assumptions.

Regarding the operational science of Islam, the author quotes Dr. Adi Setia (2003). In his view, Islamic science can mean: (1) Studies of the history of the development of empirical science and technology in Islamic civilization in relation to the previous and subsequent civilizations. This is not only aimed at knowing the history of its development, but also related to the analysis of the development of science which is useful in order to understand the nature of Islamic science. This will help find out the thoughts of past Islamic scientists. (2) Studies which are part of Islamic philosophy. This study aims to describe and explain contemporary terms from the methodological and philosophical principles that guide and underlie the development of science in Islamic civilization. This section makes Islamic Science as part of the philosophy of science in general. (3) Studies that formulate the concept of Islamic science as a long-term creative research program aimed at re-application of cognitive values and

Islamic ethics to science and technology in the contemporary world.

In more detail, the author explains his description, namely: (a) study of the history of science and technology in Islamic civilization, (b) study of science philosophy, (c) study of science and technology appropriate to Islamic values and ethics.

The contribution of Muslim scientists in the development of science is the one discussed by the author, starting with their motives in making great works. Al-Khawarizmi said that his works were based on religious motives and hoped for a reward from Allah. He described the conversation between Ibn Haytham and his student, Surkhab. When Surkhab became his student, Ibn Haytham agreed with the condition of paying 100 dirhams every month. When Surkhab completed his three years of education and would part with his teacher, the teacher called him and returned all the dirhams as a condition for becoming his student. It turns out that the money is only limited to testing the sincerity of the student.

It is also said that the financial condition did not prevent the Muslim scientist in the past from seeking knowledge. For example, Ibn Rushd, Ibn Hazm, and Ibn Khaldun were among the wealthy scientists, but wealth did not stop them from seeking knowledge. On the other hand, al-Jahiz, Ibn Siddah, and Ibn Baqi, al-Bajji were among the poor figures of Islamic scientists, but poverty did not prevent their enthusiasm for knowledge.

The discussion above is interesting because the author takes a reference from a Western scientist, Howard Turner, in his *Science in Medieval Islam: An Illustrated Introduction* (1995). Turner said that what motivates Muslim scientists to build a scientific tradition is that the religious doctrine explains that the universe is God's creation and His deeds, therefore, to understand God it is necessary to investigate His creation, namely this universe.

Examples of works by Muslim scientists that are appointed by the author are the works of Ibn Haytham on the phenomenon of the existence

of the atmosphere, his treatise on twilight, his theory on rainbows, refraction of light, the study of eye physiology and others. Ibn Haytham is recorded to have written 200 books, but only a few have survived to this day, one of which is *al-Manadzir*. The author also raises other Muslim scientists who have great works, such as *al-Battani*, which the West calls *Albategnius*, Ibn Satir, Hunain bin Ishaq and others.

According to the author, the work of Islamic scientists has had a direct or indirect effect on the progress of science in the West. The author strengthens his opinion with the explanation of a Western scientist, Robert Briffault. He said that although Roger Bacon or Francis Bacon are called the earliest Western scholars who brought the empiric method to the world of science, in fact Roger Bacon was only the bearer of the Muslim scientific tradition to Christian Europe, and did not get tired of Arab (Muslim) science as the only way to true knowledge.

Furthermore, the author explains that Western society considers Greco-Roman philosophy and Judeo-Christian teachings to be their ancestors. From Roman civilization, the modern West took aspects of its legal theories, while religious and metaphysical aspects were rooted in the Judeo-Christian tradition. Greece is considered to be the epicenter of Western civilization in philosophy and science. This is shown by the number of terminologies taken from symbols in science and mathematics in the West. The author also provides several examples in this book, such as the use of Greek alphabetic α , β , and so on, also the use of Greek gods and goddesses to name celestial bodies, such as Mars, Saturn, Jupiter, and others.

The author also explains the development and struggles of Greek philosophy which became the basis of Western civilization. Starting with pre-Socratic period like Miletus, Pythagoras, and others, followed by the Classical period such as Socrates, Plato and Aristotle, then the Hellenistic period where external thought was mixed with Greek thought. The author also explains how the development of understanding relativism of truth which is currently developing rooted in the Greek Sophists. The Sophists did not believe that truth or knowledge could be reached by humans,

they even doubted their own opinion which was the forerunner of modern skepticism.

Sophism developed in the 5th century BC and was carried by four figures, namely Protagoras, a very individualist figure who said that the truth depends on each person; Gorgias, a rhetorician who argues for nihilists who don't have faith in anything; Hippias, who argued that laws should not be enforced on individuals; and Prodikos, a moralist who likes to ridicule the beliefs of others and is a relative. The author completes the explanation with a reference to a book entitled *Nature of Greek Mind* by Mohammad Hatta (2006).

The development of science in the Middle Ages is one of the interesting discussions in this book. This began with the entry of Christianity and the adoption of this religion into Eastern Roman rule by Konstantin I at the Council of Nicaea in 325 AD. Then there was a mixture of European, Greek, Roman and Christian cultures, namely Christianity that was different from previous Christianity.

Currently there were often conflicts between the Church and philosophers and scientists. Not a few of them were persecuted by the Church. For example, are Francesco Patrizi (1529-1597), Francesco Pucci (1543-1597), Giardano Bruno, Lucilio Vanini (1585-1619) Galilio Galilei (1564-1642), and others. At that time scientists were not free to carry out research because the Church's doctrine was very dominant. The dominance of this Church which was later referred to by the West as the dark age of scientific development.

The dominance of the Church made scientists so embarrassed that they wanted to escape from it. According to the author, this phenomenon also happened to Muslim scientists. They want to be free from religious "intervention". The relationship between religion and science in the Western world has had its ups and downs. In what is known as the "dark age", science is completely under the control of religion, so there is an expression that philosophy and science are the servants of the science of religion, and theology of religion is the queen of science.

However, due to a weak epistemology, church domination gradually receded and was replaced by a new era where humans felt reborn, which later Western society called it renaissance (rebirth). This is different from the Islamic concept of science, where Islam has a clear epistemology, so it is not right for Muslim scientists to follow the footsteps of the West who want to separate religion and science.

Furthermore, the author explains that since Western society has named this period the Enlightenment, which is a new age after the Dark Age because the light of freedom is covered by dogmas that are difficult to reason. Since the Enlightenment era, empiricism and rationalism have become Christian. The flow of empiricism was strong with the emergence of figures such as Francis Bacon, Thomas Hobes, John Locke, David Hume. Meanwhile, the proponents of rationalism are Rene Descartes, Baruch Spinoza, G.W Leibnitz, and Blaise Pascal. According to the author, both figures of rationalism and empiricism, they believe in God, but they are very critical of Christian dogmas. An example is Newton who rejected the concept of the Trinity and did not believe in an evil spirit and an immortal soul. For this, the author refers to the writings of Stephen D. Snobelen under the title Isaac Newton, heretic: the strategies of a Nicodemite (*British Journal for The History of Sciences* 32, 1999, pp. 381-419).

The metaphysical concepts created by scientists during the Enlightenment according to the author were caused by the obscurity of the metaphysical concepts of religion that existed at that time in Europe, especially when they discovered two methods that were considered to have power in humans, namely the senses and rational reason. So the secularization of science in Western society began to occur at that time until now. This is different from the relationship between religion (Islam) and science with clear concepts and epistemology. So it is inappropriate for a Muslim to separate science from religion, because the senses and rational reason without the guidance of Revelation can cause damage.

The author quotes Prof. Dr. H. M. Rasjidi (1983) who tried to summarize the situation in

Europe during the Enlightenment, that revolved around three elements:

- a. Complete belief in the scientific method
- b. Loss of belief in religious dogma (Christianity)
- c. The more pervasive understanding of materialism

The author adds that scientists' opposition to God and religion continues into the modern era, this is evident from Stephen Hawking's statement in his work *The Grand Design* (2010): "Their creation does not require the intervention of some supernatural being or god. Rather, these multiple universes arise naturally from physical law".

Positivism views that natural science is the only valid source of knowledge, because the object of knowledge can be observed and can be verified through experimentation. In essence, Islam does not reject empirical and rational proof, even Muslim scientists have preceded the West in combining empirical and rational methods, as conducted by Ibn al-Haytham. The problem is that the West makes empirical and rational methods as the only means of proving the truth and channeling knowledge by negating metaphysics.

A prominent example of positivism thought cited by the author is Isidore Auguste Marie Fracois Xavier Comte (1798-1857). He created a hierarchy of human thought patterns on three levels. The lowest level is when humans think based on religious beliefs. This is called the theological stage.

Then it rises to the metaphysical stage, when humans start to use their reasoning and try to solve some problems and questions by speculating looking for metaphysical things without referring to certain beliefs to explain reality. God is still believed but the abstract God originates the human mind.

The next stage is when humans can answer various problems through empiric (positive) scientific methods. In this case humans are considered to be entering the most advanced stage, namely the positivism stage or the scientific stage.

Comte implies that people who still believe in religious sources to explain reality are people at an underdeveloped stage. A statement which cannot be observed empirically and cannot be verified legally according to logical Positivism is meaningless and a waste of time to discuss it.

In this book the writer lists the figures known as the originators of the Islamization of science, including: Syed Muhammad Naquib al-Attas, Sayyed Hossein Nasr, Ismail Raji 'al-Faruqi, Zainuddin Sardar and others. Each of these characters has differences in point of view and point of emphasis.

Syed Naquib al-Attas used the term "Islamization of Contemporary Science" rather than "Islamization of Science", because science was basically Islamic before it was contaminated by Western and secular views of nature. The Islamization of contemporary science must depart from an Islamic worldview. His idea of the Islamization of modern science is very basic because it starts from the aspects of language, ontological, epistemological and axiological aspects. The Islamization in question is also not ahistorical, because it is a process that has been going on since the time of the Prophet so that it is able to answer some objections from critics of the Islamization of modern science. Al-Attas then founded a higher education institution, namely ISTAC (International Institute of Islamic Thought and Civilization) in Malaysia.

Isma'il al-Faruqi emphasizes on the unity of knowledge that departs from *tauhid*. Because for a Muslim, this world is a stage of life that is moved by God's laws. Al-Faruqi argues that the first step that must be taken in the Islamization of knowledge is to Islamize modern scientific disciplines to textbooks. He even established an Islamic science institute called IIIT (International Institute of Islamic Thought) in the United States.

Sardar stated that the decline of Muslims in science can only be reversed through conceptual changes. However, the concept of Sardar does not appear to be sustainable into a clear concept, because what is meant by "conceptual" is not fully explained and his efforts at the Islamization of science seem to have stopped.

This book also explains the definition of the Islamization of science, namely the liberation of science from all aspects that are contrary to the Islamic view of nature, namely concerning concepts, assumptions, symbols, ethics, interpretation, and others. This must start from planting the Islamic world view in the mind of a Muslim scientist, before he applies the concept of Islamization of modern science. This view of nature contains concepts about God, nature, science, education, humans, revelation, prophets, value systems, and so on.

The authors mention there is a misunderstanding among scientists about the meaning of the Islamization of science. Then the authors explain the problems that arise as a result of the secularization of science. Among them is the breakdown of epistemology which causes the loss of concepts and hierarchies of science. For example, natural science is equated with the science of *aqidah*. The science of making sculptures is equated with the knowledge of Qur'anic interpretation. The science of assembling computers is equated with the science of hadith. This generalization is very visible in the education curriculum in schools.

In the conclusion of this book, the author explains the characteristics of a Muslim scientist, namely those who make the Islamic world view in their scientific activists. They realized that the universe that they observed and studied were verses and clues that reminded them of al-Khaliq or The Creator.

Then the author explains that the task of a Muslim scientist is to provide fundamental solutions to problems in society because he is the carrier of the light of knowledge. His job is to make improvements during his community. He is not a scientist who is busy and preoccupied with his own world, or who uses his knowledge to serve corporations to extract the nation's wealth as much as possible, while his people are good spectators.

This book is thought-provoking because it invites Muslim scientists to reflect on the purpose of studying science and realize that Islam has a clear concept of science. This is a characteristic of comprehensive Islamic teachings covering

various aspects of life, including aspects of science, so that in studying science one must base it on an Islamic perspective.

The discussion of the meaning of science in this book is complemented by references from the work of classical and contemporary Islamic scientists and Western scientists, including of classical Islamic scholars (Ar-Raghib al-Ashfahani, al-Ghazali, al-Jurjani, and Ibn Kathir), contemporary Islamic scholars (Naquib al-Attas and Sayyid Qutb) and also Western scientists (Edwar O. Wilson and Franz Rosental).

This book is easy to read and very good for understanding the meaning of science in Islamic concepts and the history of its development. It is

equipped with references that can be accounted for so that it has a strong foundation for each conclusion. The author has been successful in leading the reader to an essential Muslim understanding. In terms of content, this book is almost without flaws. There are small things that interfere with understanding due to writing errors in words or sentences.

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