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INTEGRATIVE-MULTIDIMENSIONAL SCIENCE PARADIGM: A PERSPECTIVE OF ISLAMIC EPISTEMOLOGY

Himyari Yusuf[1], Muhammad Aqil Luthfan[2] M Baharudin[3]
[1,3]*Universitas Islam Negeri Raden Intan Lampung*
[2]*Universitas Islam Negeri Walisongo Semarang*
Email: [1]imeriariy85@gmail.com, [2]aqilluthfan@walisongo.ac.id,
[3]baharudinushuludin@gmail.com

Abstract
Science and human life are inseparable. Without science, human life cannot develop properly. Thus, epistemologically, humans must be placed as the basic foundation of science; that is, humans who have religious and spiritual dimensions equipped with sensory, reason, intuition, and revelation potentials. These dimensions and potentials are the main structure and characteristics of integrative-multidimensional science. This type of science is quite different from modern and contemporary science developed by the West. Western science has reduced the dimensions and potentials of humans into materialistic and mechanical beings; that is, humans who do not have spiritual nor metaphysical dimensions. The Western science is no longer meant for humanity, but for science itself. This study seeks to examine the structure and characteristics of integrative-multidimensional science from the perspective of Islamic epistemology. It makes use of philosophical methods which involve descriptive analysis, interpretation, reflection, and hermeneutic circles. After reviewing the main points of the problem, the study argues that the structure and characteristics of integrative-multidimensional science are ontologically monodualism. In this sense, material dimensions (jasadiyah) and immaterial dimensions (ruhaniyah) are seen as a unit that is synergistic and supporting each other. All the basic human potentials and revelation are the foundation of science. Each of them is seen as an inseparable part. Therefore, in the perspective of Islamic epistemology, integrative-multidimensional science is considered relevant to and connected with the Islamic science.

Abstrak
Ilmu pengetahuan dan kehidupan manusia tidak dapat dipisahkan. Tanpa ilmu pengetahuan, kehidupan manusia tidak dapat berkembang dengan

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baik. Dengan demikian, secara epistemologis, manusia harus ditempatkan sebagai landasan dasar sains; yaitu, manusia yang memiliki dimensi religius dan spiritual yang dilengkapi dengan potensi indra, akal, intuisi, dan wahyu. Dimensi dan potensi ini adalah struktur utama dan karakteristik ilmu integratif-multidimensi. Jenis sains ini sangat berbeda dari sains modern dan kontemporer yang dikembangkan oleh Barat. Ilmu pengetahuan Barat telah mereduksi dimensi dan potensi manusia menjadi makhluk mekanistik dan mekanis; yaitu, manusia yang tidak memiliki dimensi spiritual atau meta-fisik. Ilmu pengetahuan Barat tidak lagi dimaksudkan untuk kemanusiaan, tetapi untuk ilmu itu sendiri. Penelitian ini bertujuan untuk menguji struktur dan karakteristik ilmu multidimensi integra-tive dari perspektif epistemologi Islam. Itu menggunakan metode filosofis yang melibatkan analisis deskriptif, interpretasi, refleksi, dan lingkaran hermeneutik. Setelah mengkaji poin-poin utama masalah, penelitian ini berpendapat bahwa struktur dan karakteristik ilmu integratif-multidimensi adalah monodualisme ontologis. Dalam pengertian ini, dimensi material (jasadiyah) dan dimensi immate-rial (ruhaniyah) dipandang sebagai unit yang sinergis dan saling mendukung. Semua potensi dasar manusia dan wahyu adalah landasan sains. Masing-masing dipandang sebagai bagian yang tidak terpisahkan. Oleh karena itu, dalam perspektif epistemologi Islam, sains integratif-multidimensi dianggap relevan dan terhubung dengan sains Islam.

Keywords: dimensions; basic potentials of humans; science.

Introduction

Science always means human science because none other than humans has science. Both science and humans are the two inseparable realities. Science is an important component in supporting humans' existence because, naturally, they are the thinking animals or hayawan an-natiq (Kuswanjono, Jurnal Filsafat Vol. 26 No. 2 August 2016: 292). Therefore, an integrative-multidimensional science places humans, as a whole, as the basic foundation for the existence of science. Humans in a whole are those who have material dimensions and immaterial dimensions, as well as sensory, reason, intuition, and revelation potentials. These dimensions and potentials are the integral part of human existence. They should be placed in one unit and not separated, either by reducing or eliminating one of them.

This integrative-multidimensional science differs from modern science developed by the West, which has influenced the humans'

mindset throughout the world recently. Modern science, in its development, has displayed faces and characteristics that are different from those of the past. As stated in *Krisis Barat Modern* (The Crisis of the Modern West) by Nasr, modernity in the West began in the seventeenth century, the same time when the supremacy of rationalism, empiricism, and positivism over religious (Christian) dogmas began. This fact was easy to understand since the modern century in the West was characterized by efforts to separate science and philosophy from the influences of religion, also called secularism. The combination of rationalism, empiricism, and positivism in one epistemological package gave birth to the scientific method (Saleh Nur, Jurnal Ushuluddin, Vol. XVII. 1 January 2011: 17-18). According to Nasr, the crisis of modern Western civilization originated from the scientists refusal to divine values; they dump God from their lives. Humans are, then, externalized and begin to conquer the world (nature) haphazardly; they desecrate relations with nature. Nature was placed only as objects and resources that must be exploited to the maximum extent possible (Saleh Nur, Jurnal Ushuluddin, Vol. XVII. 1 January 2011: 19). In short, the difference between integrative- multidimensional science and modern science by the West lies in the three pillars supporting the science, i.e. ontology, epistemology, and axiology. In one hand, modern science only recognizes the rationalistic-empirical truth, which is the nature of positivism. On the other hand, the values of morality in a man, which can be the consideration and basis for determining the direction of the development of science, certainly cannot be understood from a positivistic point of view (Kuswanjono, Jurnal Filsafat Vol. 26 No. 2 August 2016: 294). While integrative-multidimensional science places humanity in a whole with revelation as its basic foundation, modern science by the West does not recognize divine values and anything that is metaphysical or spiritual.

Meanwhile, Keraf suggested that the perspective used by modern science and technology was the perspective that developed during the scientific revolution in the 17thand 18thcenturies. The most influential philosophers at that time included Francis Bacon, Rene

Descartes, and Isaac Newton. The perspective of modern science and technology was basically secular, mechanistic, and reductionist (Sony Keraf, 2005: 253). Furthermore, the paradigm of modern science that rested on Cartesian logic in particular differs, even separates explicitly, the soul from the body, the subject from the object, the spirit from the matter, the facts from the values. Difference and separation are in conjunction with the inductive method developed by Francis Bacon. Such a method is the main force that determines the development and progress of modern science (Sony Keraf, 2005: 254). The inductive method is the partner of empiricism. It means that the method developed by Francis Bacon has indeed substantially led to science which overrides the role of God and religion. Similarly, Kuntowijoyo (2014: 120) explains that the modern century in the West is characterized with the mindset of humanism-anthropocentrism, which is a view that considers the life of humans is not centered on gods or God, but on humans themselves. In other words, humans are the masters of the entire reality of the universe.

In the modern age, the Western scholars have been succeeding in putting aside the role of God from the center of human life, although empirically they have produced a variety of sophisticated, spectacular sciences and technologies, especially in the field of information and transformation. Both of these fields have provided a lot of convenience for human life, i.e. the world seems to be without distance, without separation between regions, so that it eventually becomes global. The globalized world has touched all aspects of human life, not only social and cultural issues but also human civilization in general. As explained by Sumarna, (2015: 82) the progress of science and technology is the achievement of empirical-rational philosophy which is quite astonishing. Humans not only subjugate the nature, but also rule over it. The nature has now become egalitarian and tame in human hands.

In that case, Sumarna (2015: 88) also explained that the third global crisis is concerned with the birth of epistemological imperialism. The concept and paradigm of empiricism-rationalism has now colored all scientific studies. Essentially, it must be admitted that the

two foundations of modern Western epistemology, i.e. empiricism and rationalism, have influenced the social sciences and humanities, including the religious sciences. The social sciences are drawn towards sensory culture, i.e. those that are empirical, worldly, secularist, humanistic, pragmatic, and hedonistic. Such an epistemology, according to C.A. Qodir (1991: 2), is seen to be the main force driving the emergence of anti-metaphysics in modern Western civilization, especially related to the relationship between spirit and body. Descartes was the figure who gave fundamentally conflicting qualities to spirit and body at the dawn of modern European civilization. The former is considered to have awareness while the latter is not; the former has breadth while the latter does not. The dualism proposed by Descartes actually became the basis of the birth of secularism and atheism of science in the modern century.

Structure and Characteristics of Integrative-multidimensional Science

The previous section explained that science was originally integrative and had a spiritual and metaphysical dimension, like the one that grew and developed in the ancient Egypt and Babylon. However, in subsequent developments, scientists began to feel uncomfortable with the existence of God, religion, and other things that were spiritual and metaphysical. There is a tendency that if divine, religious, spiritual, and metaphysical values are integrated in science, humans become restricted (not free) in developing ideas and thoughts. This is what ultimately makes science, especially in the West, not integrating itself with divine values and religion, and all that has metaphysical spiritual nuances. Science that separates itself from divine values, religion, spirituality, and metaphysics has historically originated in the Western world, especially in Cartesian and Newtonian scientists. Modern scientists of the West address sharp criticism toward the Medieval West, which has developed science with a theocentric spirit. According to them, theocentrism has made the Medieval West stagnant in scientific development and left behind in civilization, known as the dark age of the Western world (Konrad Kebung, 2011).

According to Syamsuddin (2012: 30-31), after the modern West has managed to escape the confines of theology, scientists also eliminate aspects of value consideration in scientific activities. Science must be built on scientific objectivity, which is free of value. It is only concerned with describing objects as they are and can only be tested according to the standards of science itself (science for Science). This kind of view is what Noeng Muhadjir (2014: 3) refers to as an ontology that is anti-ontology.

The study of the structure and characteristics of integrative-multidimensional science must originate from the ontological and epistemological foundations of that science. As mentioned in the abstract, integrative- multidimensional science places humans in a whole the foundation of science. Human beings in a whole is those who have material dimensions and immaterial dimensions, as well as the basic potentials like sensory, intellect, intuition, and revelation which are considered an inseparable part of human life. Harun Nasution (1995: 37) explained about the nature of a whole person by referring to the verses of al-Quran and the Prophet's Hadith that human beings are composed of material and immaterial elements, physical and spiritual elements. The human body comes from the ground, and the soul comes from the immaterial substance in the supernatural world. The body has the power to hear, see, feel, smell, and so on, while the spirit has the power to think called reason that is centered on the head and the power to feel centered on the heart. According to Nasution, a whole person consists of the material dimensions, immaterial dimensions, reason, sensory, and heart. Relevant to Nasution, Musa Asy'arie (1999: 211) argues that in the concept of Islamic philosophy, the creation of mankind does not consist of only two elements namely physical and spiritual, but also elements of the soil that form the physical, the element of water that forms the life force, and elements of the Divine spirit that make up the functions of hearing, vision, and conscience. There are three fundamental elements in the process of human creation, i.e. elements of the body, elements of life, and element of spirit. This view of

Asy'arie is basically not different from Nasution's saying that the essence of human beings is composed of body, spirit, sensory, reason, and intuition.

With the recognition of the material dimension and the immaterial dimensions as the human nature, integrative-multidimensional science, hence, ontologically adheres to a two-stance notion or what is called monodualism, namely an understanding that places the body and spirit or the material and immaterial dimensions as inseparable. These two dimensions, in an epistemological review, are mutually reinforcing and presupposing. At the epistemological level, what is recognized and become the source of knowledge is all the basic potentials of humans, namely sensory, reason (ratio), intuition (qolb), and revelation –revelation is believed to be part of human basic potential. All of these basic human potentials are put together as one unit, or integrative.

In this case, integration means a union of religious (Islamic) sciences and general sciences, such as natural sciences, technology, and social humanities. W.J.S Poerwadarminta argues that the term integration is an attempt to unite to become complete. Integration is an attempt to make two or more things become a unified whole and cannot be separated (Lukman Ali, 1998: 383). In the context of integrative- multidimensional science, the term integrative is intended to unite all the basic human potentials which include sensory, reason (ratio), intuition (qolb), and revelation, so that everything becomes a unified whole as the basis of epistemology.

Meanwhile, the term multidimensional means to have many dimensions or aspects (Lukman Ali, 1998: 671). That is, the term can be interpreted as something that has many aspects or dimensions. Multidimensional in this study refers to the nature of human beings and all dimensions that frame their life, such as material dimensions and immaterial dimensions, from which other dimensions are born according to the basic human needs, such as social dimension, moral dimension, spiritual dimension, religious dimension, divine dimension, and so on. All of these dimensions form the integrative-multidimensional science.

In line with the above explanation, Syamsuddin (2012: 33) stated that the study of the philosophy of science emphasizes not only the ethical values that exist in the body of science, but also the metaphysical values or philosophical assumptions, whether consciously or not. It becomes a paradigm that affects not only the process of achieving truth, but also the interpretation of the findings to be achieved. By referring to several views of scientific experts, Syamsuddin (2012: 31) expressed criticism towards the initiators of *science for science*. According to him, some things that are not integrative in science cannot be essentially justified. Henry van Laer, for example, affirms the existence of subjectivity and objectivity in science. Both of them work together as a fabric of rationality and experimentation that gives birth to scientific findings, so that the researcher is no longer just an observer, but a participator (Syamsuddin, 2012: 31-32).

Related to the metaphysical dimension in science, metaphysicists show metaphysical assumptions for the formation of new scientific theories or paradigms. Some of the roles of metaphysics for science according to them are as follows:

1. Metaphysics teaches careful thinking in developing science. It is carefully prepared to answer various difficult problems, and demand a serious flow of thinking.
2. Metaphysics demands originality of thinking that is necessary for science. It always tries to find new things and bring them into the context of discovery, not only the context of justification.
3. Metaphysics provides careful consideration for the development of science. That way, the questions raised have a strong foundation.
4. Metaphysics opens opportunities for different visions in seeing reality because there is no truth to science that is truly absolute (Konrad Kebung, 2011: 11-12).

Based on the roles of metaphysics as stated by Konrad Kebung above, it is clear that metaphysics has a very basic urgency in the development of science. Therefore, at the philosophical level, it can be said that there is no separation between metaphysics and science. In other words, without the roles of metaphysics, science will be narrow

and closed. Thus, metaphysics is essentially impossible to separate from science, as claimed by modern scientists in the West. That is, metaphysics is a necessity for science. Furthermore, Didin Hafidhuddin, as quoted by Alim (2014: 106), also suggested that the non-neutrality of science can be seen in two aspects. The first is the partiality of the theory as a result of the development of logical and empirical knowledge, as well as sense (intuition). The second is the tendency to incorporate metaphysical elements into the discussion of science with its various behaviors. Syamsuddin (2012: 34-35) reiterated that science actually absorbs elements from the outside, such as ideology, worldview, and ethics. In fact, these elements become an important and inseparable part in the development of science, including elements of religion.

The various views as mentioned above philosophically show that integrative-multidimensional science placing humans with all their dimensions and potentials as the basic foundation for the creation of science is also a science that is not value-free or not neutral. The lack of neutrality or freedom from these values is because the values that must be integrated with science are the natural values inherent in the human selfhood. This means that metaphysical and spiritual values, religious values, divine values, moral values, social values, and so on are essentially the values or dimensions that frame or formulate the nature of human beings and humanity. Therefore, these values or dimensions cannot be separated from the human science.

Stenmark, as quoted by Syamsuddin (2012: 39), divides religion and science into four dimensions, three of which are as follows:

1. The social dimension, where religion and science as a social practice are formed by the practitioners in certain cultural and historical backgrounds.
2. The teleological dimension, which consists of the objectives of religious and scientific practices.
3. The epistemological or methodological dimension, which is used and developed to achieve the objectives of religion and science.

Stenmark's view seems to be incomplete for it has not included the metaphysical dimension. The view is considered not universal.

According to Al-Attas and Golshani, the metaphysical dimension becomes a fundamental dimension that influences other dimensions. It is a worldview or philosophical assumption used as a guide to develop science. Furthermore, philosophical interpretation is also an important dimension (Syamsuddin, 2012: 41). Here, Al-Attas and Golshani want to assert that science cannot be separated from the metaphysical dimension and dimension of philosophical interpretation. These two dimensions occupy the most fundamental position in development of science.

The various views expressed by the experts before show that the integration of science and religion has been contained in various dimensions, including social, theological, epistemological, methodological, spiritual, and metaphysical dimensions, as well as the dimension of philosophical interpretations. Thus, the integration of science and religion is an undeniable necessity, and such integration is reflective in a multidimensional manner because it encompasses various dimensions related to religion and science. Sumarna (2005: 50) asserted that the conditions that occur due to the development of science recently demand an epistemological study. What needs to be emphasized is the importance of including the values of universal revelation. Without the element of revelation, the paradigm of science that supports humanity will be difficult to build. Sumarna (2005: 25) maintained that these difficulties have been experienced by philosophers and scientists who try to avoid epistemology that is based on human nature and traditions and recognizes the existence of the noble tradition of revelation and the role of God. In this sense, modern society is forced to recognize the epistemological basis that is rational, factual, empirical, and sensual. This view by Sumarna emphasizes that without the dimensions of revelation and divinity, symptoms of dehumanization are feared to be widespread and could pose a serious threat to humanity. As a result, the relationship between fellow humans, humans and nature, and humans and God is not harmonious.

Based on the reflections and views above, it can be understood that there is a common thread connecting human nature (material

and immaterial dimensions, intellect, mind, sensory, and heart or intuition) with revelation and God. In fact, this connection is something natural in human life. If one of them is separated, the harmonious relationship that is expected can be broken. The relationship damage may also have implications for the destruction of human science, and, in turn, it can give birth to extraordinary tragedies or complex problems in the human life and the universe as a whole.

The complexity of human problems as the implications of scientific paradigm that is not integrative-multidimensional today has been obviously found in every aspect of human life. According to Seyyed Hossein Nasr, as cited by Syamsuddin (2015: 96), environmental damage or ecological crisis that has hit the world today is very worrying. The extinction of many flora and fauna is one example of the ecological crises. Such a catastrophe, according to Seyyed Hossein Nasr, is a logical consequence of science which places humans only as mechanistic and materialistic creatures as conceptualized by the modern scientists. This kind of conception can only formulate human based on the dualism of soul and body, without the third dimension, namely the spirit (Syamsuddin, 2015: 98). Further, still according to Hossein Nasr, this incomplete understanding is compounded by the conceptions of humans from the increasingly specialized scientific disciplines. Every science formulates its own conceptions of human beings without a unifying belt, resulting in an ambiguous understanding (Syamsuddin, 2015: 99). Akhyar Yusuf Lubis (2014: 124) stated that science according to the Newtonian paradigm places the universe as a machine that follows the laws of cause and effect; space and time are objective realities, and humans are like machines.

The thoughts given by experts above show the urgency of integrative-multidimensional science to reverse the dignity of humans and the survival of all beings. Similarly, it also implies the danger of a partial and materialistic science when it controls humanity and world. In the given situation, ecological and humanitarian disasters are inevitable because nature and humans have been materialized and mechanized. Humans are viewed in a partial way, that is, only from

the aspect of the body without substance or essence called spirit (Syamsuddin, 2015: 101). For Nasr, the soul and body, as formulated by Descartes as human elements, are only part of the accident, while the substance is the spirit. In the crisis of humanity that has been alarming recently, according to Nasr, efforts to revive the knowledge about the sacred and transcendent cosmic reality as the foundation are highly needed (Syamsuddin, 2015: 98). The science or sacred knowledge referred to by Nasr is the science which includes material dimensions (bodies), immaterial dimensions (spirit), mind, sensory, and heart (intuition), revelation (religion) and God. This sacred knowledge is in accordance with the concept of integrative-multidimensional science.

Tracing various views explained before, it can be understood that the structure and characteristics of integrative-multidimensional science recognize and place material dimensions and immaterial dimensions as an ontological foundation, and then reason, sensory, heart (intuition), revelation (religion) and God as an epistemological foundation. Thus, the characteristics of integrative-multidimensional science are that the science is not neutral or not value-free. It is not value-free because there are various dimensions related to basic needs of the human nature in science. Therefore, the objective or axiological aspect of integrative-multidimensional science is to prosper human life materially and immaterially, individually and socially, in the world and in the hereafter, and to reach the highest truth, namely the truth of the God.

Structure and Characteristics of Integrative-multidimensional Science in the Perspective of Islamic Epistemology

After reviewing the structure and characteristics of integrative-multidimensional science, it is important then to examine it from the perspective of Islamic epistemology. Epistemologically, Islamic science has distinctive characteristics that are fundamentally different from the sciences developed in the West, be in the basis, the source, the means, and the methodology. In Islam, science has a solid foundation, namely al-Qur'ān and Sunnah; it is sourced from physical and

metaphysical realms; it is obtained through senses, reason, and heart (Kosim, 2008: 122).

Islam teaches that Allah the Almighty is the source of everything. The primary source of knowledge in Islamic epistemology is the revelation received by the Prophet from Allah SWT. Therefore, explanation of the source of knowledge in Islamic epistemology is emphasized in (1) the words of Allah in al-Quran and (2) Muhammad SAW as the recipient of the revelation, which in this case refers to the Prophet's Sunnah – everything that comes from Rasulullah (Husaini, 2013: 92-93). Mehdi Golshani (2003: 56) also argues that al-Quran contains all classical and modern science. The book of God covers everything. There is no basic problem in any knowledge that is not shown in the Quran. In the Quran, one can find amazing aspects of the creation of the earth and heaven.

In addition to al-Quran and Hadith, other sources of knowledge recognized in Islamic epistemology are reason, sensory, and intuition. They are the basic potentials given by God to humans. In Islamic epistemology, the sources of knowledge other than the revelation include reason ('aql), heart (qalb), and sensory. Al-Quran calls on humans to use their senses and reason in human experience (rational-empirical), both physical and metaphysical, because the senses and reason play a complementary role. Therefore, it can be understood that the sources of knowledge in the epistemology of Islam include the words of Allah (al-Quran), Hadith of the Prophet, reason, intuition (qolb), and sensory (Husaini, 2013: 102-108).

The structure and characteristics of integrative-multidimensional science place humanity in a whole as the basic foundation of science, so that this type of science shows monodualism ontology. Such an ontological choice is sometimes confused with the ontology of Islamic science. In Islam, humans are understood as a whole, neither sorted out nor reduced and mechanized. What forms Islamic epistemology has been mentioned in the Quran, namely the metaphysical realms and the physical or visible realms (Husaini, 2013: 88).

In Islam, the material and immaterial dimensions are recognized to be mutually reinforcing. There is no spiritual dimension without

the material (physical) dimensions, and there is no material dimension without the immaterial (spiritual) dimension. Therefore, it is clear that integrative-multidimensional science has a very basic coherence with Islamic science. In addition to recognizing the spiritual dimensions and the physical dimensions, humans have various basic potentials. The basic potentials are essentially recognized as the potentials innate in humans and come from God as the creator of men and the universe. Some of these basic potentials are integrated into one entity because they require synergizing with one another in terms of science. Beside the necessity to be integrative, the basic potentials in Islamic epistemology are also placed as a permanent source of knowledge. In other words, Islamic epistemology also recognizes the sensory (empirical), reason (rational), and intuition (qolb) dimensions as inseparable from the existence of science (Anwar, 2007: 181-192). In short, there is coherence between integrative-multidimensional science and Islamic science according to the perspective of Islamic epistemology.

Islamic scholarship historically originated from the Prophet Muhammad, which was then passed on by his companions and thinkers. The development of Islamic scholarship is also stimulated by statements in the Qur'an that encourage people to think about the universe, such as about the creation of the universe, the phenomenon of rain, the creation of humans, etc. (Kuswanjono, 2016: 295). In addition, scientific characteristics in Islam are different from those in the West that are only based on the ratio and empirical aspects. In Islam, intuition and revelation are an integral part of science. Western scholarship is pragmatic and materialistic, without spiritual values, while Islamic scholarship is full of spirituality. In Islam, science is used as a way to understand and draw close to Allah (Kuswanjono, 2016: 296).

Based on Kuswanjono's explanation above, it can be understood that revelation in Islam is a very important source in science. That is, in addition to reason, sensory, and intuition as the sources of knowledge, Islam also places revelation as something inseparable in science. In fact, the essence that teaches humans to know or can read

(has knowledge) is God the Almighty; thus, philosophically God is the highest and essential source of human science, both in integrative-multidimensional science and in Islamic epistemology or Islamic science. The content of the philosophy is at least because, **first**, Allah provides the basic dimensions and potentials of human beings, so that they have the ability to develop knowledge in order to fulfill various needs of their lives as in the following Quran:

> *And Allah has extracted you from the wombs of your mothers not knowing a thing, and He made for you hearing and vision and intellect that perhaps you would be grateful. (Al-Nahl verse 78)*

The verse above explains that Allah has provided humans with basic potentials, namely sensory and intuition (qolb). It implies that human beings with basic potentials must possess and have the ability to develop knowledge in order to increase the dignity of humanity. **Second**, essentially, only God teaches humans in terms of science. Indeed, humans do not know anything, and it is impossible to know and understand something, except God allows it, as explained in the following verse:

> *And He taught Adam the names - all of them. Then He showed them to the angels and said, "Inform Me of the names of these, if you are truthful. (Al-Baqarah verse 31)*
>
> *They said, "Exalted are You; we have no knowledge except what You have taught us. Indeed, it is You who is the Knowing, the Wise. (Al-Baqarah verse 32)*
>
> *He said, "O Adam, inform them of their names." And when he had informed them of their names, He said, "Did I not tell you that I know the unseen [aspects] of the heavens and the earth? And I know what you reveal and what you have concealed. (Al-Baqarah verse 33)*

The meaning contained in verses 31 to 33 of al-Baqarah above shows that Adam as the first human being has been privileged by Allah with knowledge that is not taught to Angels and demons. That is, only humans are given and, therefore, they need to develop knowledge. Only humans are given the basic potentials to be able to develop knowledge. This view is reinforced by al-Alaq that only Allah

teaches everything that is unknown by humans before, and that humans must possess and develop knowledge. Verses about science have been revealed first, prior to other Surahs and verses. This fact suggests that science is something that is very urgent in human life. The first Surah and verses in question are:

> *Recite in the name of your Lord who created. Created man from a clinging substance. Recite, and your Lord is the most Generous. Who taught by the pen. Taught man that which he knew not. (Al-'Alaq verse 1-5)*

The verses above explain that Allah is the single most important and essential teacher for humans. Only God teaches people what they don't know because He really knows all the secrets of the universe, both real and hidden. Therefore, Allah is seen as the highest and essential source; He is the supreme master who teaches human knowledge. However, it needs to be understood that Allah taught science to humans through His words (the Quran). In other words, the verses above at the same time show that the most important and essential source of Islamic knowledge is the divine truth conveyed through His words or revelations. Relevant to this philosophy, Husaini (2013: 51) suggests that the emphasis on science in Islamic teachings is clearly seen in the Quran, and the Sunnah of the Prophet. Among the most important is surah al-Alaq as mentioned above, which put pressure on reading as an important medium in the effort to obtain knowledge. The verse also confirms God's position as the highest source of human knowledge.

In order to understand the integrative requirement of each source of knowledge, the following will explain the position and function of each source of knowledge, even if only at a simple level or outline. The explanation is intended to inform that each source of knowledge does have a necessity to integrate with one another. In addition, everything that is recognized as a source of knowledge is essentially a unified whole, and, at the same time, is the nature of human life

The source of knowledge in the form of revelation (al-Quran) is also called the *khabar shodiq*. According to Ahmad Alim (2014: 97),

the *khabar shodiq* includes knowledge of the past and of the people who will come. This, according to him, is in line with the Quran:

> *And We have sent down to you the Book as clarification for all things and as guidance and mercy and good tidings for the Muslims. (Q.S. An-Nahl : 89)*

Alim (2014: 99) explains that because al-Quran is full of various sciences, people who want to research literature, history, technology, stories, ethics, and any other knowledge will undoubtedly get the results in the Quran. Al-Quran as revelation provides conceptual directions, while technology is the application of the concept. Al-Quran as the verses of Allah can be divided into three categories, namely verses of *qauliyah*, verses of *kauniyah*, and verses of *nafsiyah* (Kuntowijoyo, 2004).

The three categories of verses mentioned above must be placed as an inseparable entity, because all of them are the verses of Allah. Although all three will give birth to knowledge that is in accordance with their respective regions and characteristics, whatever knowledge is born of the three will be from the same source, namely the verses of Allah, both written in the Quran, which lie in the universe, and which is in humans. Furthermore, Nazir Karim also stated that the objects and regions of science could be described based on the words of God explaining the three types of verses of Allah, i.e. in the horizon (afaq), in man (anfus), and in al-Quran (Nanat Fatah Natsir, (Ed), 2008). All three are integrated in a whole unit. Al-Quran is revealed by Allah to mankind through His messenger and serves as a guide and guideline for them in moving all aspects of life. From here, it can be understood that al-Quran serves both as a source of knowledge and as a guideline in actualizing the basic potential that exists in human beings. That is, the actualization of the basic potential, i.e. sensory, reason, and intuition is not free as the freedom understood by liberalism and positivism with no limits. In other words, because Allah knows the weaknesses and fineness of various basic human potentials, and that the basic potential works and develops according to the nature, function and purpose, Allah sends down revelation to guard, assist, and direct humans to not follow their carnal desires.

This is because philosophically various basic potentials in human beings must be integrated with revelation (al-Quran).

M. Quraish Shihab in Hamdani Bakran Adz-Dzakiey, (2006: 152-153) mentions that some of the goals of the Quran, among others, as follows:

1. To cleanse the mind and purify the soul from all forms of polytheism.
2. To create unity between various dimensions, such as the world and the hereafter, the natural and supernatural dimensions, the dimensions of science, faith, reason (ratio), and truth, social, political, economic dimensions which are all under the Oneness of Allah.
3. To suppress the role of science and technology, in order to create a civilization that is in line with human identity and the Divine light.

The above view reflects that al-Quran was revealed by Allah with a very universal purpose, namely a guideline in all activities of human life. Al-Quran also integrates various dimensions related to the needs of human life. Essentially all dimensions of multidimensional activities of human life can only be done with and in science; there is no activity carried out except with science. Thus, all activities carried out to fulfill the needs of human life are connected with science. Therefore, Syaikh Muhammad Bakhit, as quoted by Golshani (2003: 57), explains that those who say that al-Quran is a book of statements of Islamic laws or regulations, not a source of knowledge, have actually left the truth. Al-Quran is the source of all human knowledge and civilization. It contains all knowledge of external realities, both divine and worldly.

Furthermore, Imam Suprayogo in Nanat Fatah Natsir Ed, (2008: 76) asserts that the interrelationship or integration between al-Quran and Hadith with knowledge obtained through observation, experimentation, and logical reasoning, which is then commonly called modern science, seems very clear. According to Imam Suprayogo, the development of modern science would not be possible if it ignored the messages from the holy book, i.e. al-Quran and Hadith,

especially if it is meant to build human civilization (Nanat Fatah Natsir, (Ed), 2008: 77).

The purpose and function of al-Quran mentioned above strengthens the presence of al-Quran as an inseparable part of other basic human potential. Al-Quran is present to guide human beings to a better life, the right path, be mentally, spiritually, socially and morally survived. Everything is intended for the good of humans in the world and the hereafter. Therefore, these various dimensions must be fully and thoroughly integrated in a unity under the guidance of revelation, so that what is the goal of the integration of science and revelation (al-Quran) becomes more factual in human life. This is the position and function of al-Quran as a source of knowledge. This kind of reasoning is the basis of integrative-multidimensional science. This reasoning makes revelation or the words of Allah and the Prophetic Hadith as part of the basic potential of human life and as a source for the existence of knowledge. Therefore, in the perspective of Islamic epistemology, there is a very basic coherence between integrative-multidimensional science and Islamic science.

After understanding the necessity for the integration of revelation (al-Quran) and the Hadith with science and knowledge, the following will examine the necessity of integration of sensory (empirical), reason (ratio) and intuition (qolb). Sensory and reason as a source of knowledge have a significant position and function for the existence of science. As explained, various basic dimensions and potentials of human beings are gifts from God, so that humans have the ability to develop knowledge as well as to increase human dignity. Al-Quran refers to many verses that invite people to use their senses and reason in experience, both physical and metaphysical (Husaini, (Ed), 2013: 107). Thus, it can be understood that both of them do not stand alone, and both of them perfect each other and integrate with one another. In terms of sensory and reasoning, Ali Abdul Azhim argued that:

> *Senses and reason as sources of knowledge cannot be separated or stand on their own as understood by the modern Western empiricism and rationalism. Allah always calls on humans to use sensory and reason*

> *simultaneously. People who ignore the call will get lost and far from the truth. Al-Ghazali in Anwar stated that there are only three basic means for humans to obtain knowledge, i.e. senses (imagination), estimation (wahm), and reason or intuition. The senses work in his world, namely the sensual-physical world and stops at the boundaries of the reason. Reason works in the abstract region by utilizing input from the senses through imagination and wahm, and stops at the boundaries of the transcendental area (unreachable by reason) and can be known only through mukasyafah-musyahadah (Anwar, 2007: 181).*

The senses have certain weaknesses and shortcomings compared to reason. However, they are part of the *qolb* serving as a spy that is spread to the physical-sensual world and whose reports are very useful for the reason. In fact, reason can only know the physical-sensual world through the senses. Hence, without sensory assistance, the reason cannot know anything about the physical-sensual world (Anwar, 2007: 183).

According to al-Ghazali, there are five types of knowledge whose truth is believed to be certain, namely awwaliyyat, musyahadat, batiniyyah, mahsusat, and mutawatirat. These five types of knowledge are daruriyyat (whose truth is absolute and cannot be rejected) and is obtained through means of reason, senses, and intuition (Anwar, 2007: 184). Whereas, intuition (qolb) according to Syamsuddin Arif, as quoted by Alim, is when one can capture the occult messages (ghaib), understand divine clues (isyarat), receive inspiration, and so on. However, the certainty of knowledge obtained through this instrument must be confirmed to the third source of knowledge, which is the source of true knowledge, namely khabar shodiq or revelation and the sunnah of the Prophet (Alim, 2014: 16-17). Al-Ghazali in Anwar further explained:

> *Not far the possibility, O people who are fixated on the realm of reason, behind reason there is another potential that looks like what does not appear to reason. This is like the phenomenon of reason as another means behind intelligence and sensation. It reveals strange things and wonders unreachable to the senses and intelligence. Therefore, don't make the peak of perfection limited to yourself (Anwar, 2007: 193).*

Al-Ghazali's view above shows that there is also significant potential behind reason. In other words, reason must cooperate with other basic human potential. That potential can find out what is not affordable by the reason. The intended potential is intuition. Therefore, intuition as a source of knowledge has a very meaningful space for the realization of science. According to Zainuddin (2003: 67-68), Islam does not stop only on rationalism and empiricism, but it also recognizes intuition and revelation. Intuition as a faculty of direct truth comes from God in the form of inspiration, *kasyaf* without deduction, speculation and observation. Zainuddin added that intuitive knowledge is a typical knowledge of humans. This knowledge is actually also in human rationality in general. It is distinguished only by rational knowledge which emphasizes the systematic and strength of methodology (Zainuddin, 2003: 80-81).

Zainuddin's view is in line with al-Ghazali's view above, that in science, Islam recognizes the urgency of intuition in obtaining science. Even intuition is seen as having a higher position because it has a sharper power than rational and empirical aspect. Relevant to this view, Henry Bergson as quoted by Proverbs Bahtiar (2004: 107-108) explains that intuition is the result of the evolution of the highest understanding. It is a direct knowledge, which is absolute and not relative knowledge. Intuition overcomes the outward nature of symbolic knowledge, which is basically analytical, comprehensive, and absolute. It is a means of knowing directly and instantly. Intuitive knowledge can be used as a hypothesis for further analysis in determining whether or not the statement or information is correct. Intuitive and analytical activities can work to help each other in determining the truth (Bahtiar, 2004: 108). This means that reason, sensory, and intuition are one entity.

Looking at the various views mentioned before, it can be understood that intuition is inseparable from the senses and reason. Although there is a view that intuition is personal and cannot be proven, it must be admitted that intuition as one of the basic human potentials is impossible to have nothing to do with other human potentials. As asserted by Anwar (2007: 198) from al-Ghazali's extensive and in-

depth discussion of the integration of senses, reason, and intuition, it is finally understood that his concept of the achievement of science is a synthetic-integral; that is, it combines empiricism with rationalism and intuitionism by placing all the three as the sources of knowledge simultaneously and in synergy.

Relevant to the view above, Henry Bergson as cited by K. Bertens (2001: 20) argues that besides sensory and reason, humans also have the power of intuition. While reason is oriented towards matter, intuition is specifically directed at the immaterial. However, there is a reciprocal relationship between reason and intuition since because both of them need each other. Intuition cannot work without reason, as the spirit cannot exist without material dimension. Furthermore, Harun Hadiwijono (1991: 137) explains that intuition can explore the nature of all reality, namely a spiritual energy. Intuition is a form of thinking that is different from how the reason works, because intuitive thinking is dynamic. The most basic function of intuition is to recognize the nature of person and the nature of all reality.

Juretna, as quoted by Himyari Yusuf (1999: 13), also explains that according to Bergson, the ratio is only one of the elements of the power of the human soul and is limited to definite and existing mechanistic and deterministic things. To arrive at the depth of reality, it is not the ratio that acts but an intuition. Intuition is a force that continually encourages humans to renew static patterns. Various views and explanations before conclude that intuition is a basic human potential that cannot be separated from other potentials, such as the senses and reason. Although their working area is different, they are complementary and need each other. Intuition has the ability to know and dive into the nature of all reality, while the senses and reason are only at the level of material or existing. Reason or ratio works when there is absorption or information from the senses.

Based on the description above, it can be understood that all human potential is absolutely integrative, and on the basis of various integrative potentials, integrative-multidimensional science, which is epistemologically coherent with Islamic science, places the dimensions of jasadiyah and ruhaniyah (human nature), as well as reason,

sensory, intuition, and revelation (human basic potentials) as the basis for the creation of science. The activities of all the basic human potentials are escorted and guided by revelation originating from the creator of the universe, so that the results are directed to science that is able to answer all the problems and needs of human life and humanity. This argument is actually, according to Baso Hasyim in the Da'wah Tabligh Journal Vol 16 No. 2 (2015: 1), one of the characteristics distinguishing Islam from the other religions, namely the emphasis on science. Al-Quran and Sunnah invite Muslims to seek and gain knowledge and wisdom, and to place people who are knowledgeable to a high degree. Islam greatly respects science. This invitation was seen since the emergence of Islam brought by the Prophet Muhammad when he received the first revelation to read (Tari Iskandar, 2018).

Conclusion

After conducting a thorough, fundamental, and rational discussion about the structure and characteristics of integrative-multidimensional science in the perspective of Islamic epistemology, we can finally conclude that: *First,* the structure and characteristics of integrative-multidimensional science place humans in a whole as the basis for the creation of science. Human beings are composed of material dimensions (jasadiyah) and immaterial dimensions (ruhaniyah), so that the ontological choice of this type of science is monodualism. They have some basic and innate potentials, namely sensory, reason, and intuition (qolb) that are coupled with revelation from al-Quran and the Hadith. All of these potentials are used as the epistemological foundation, and all are integrative. In addition to functioning as a source of science and knowledge, the revelation also serves as a guide for the work of senses, reason and intuition. In this case, integrative-multidimensional science is considered inseparable from the religious, spiritual, divine, and social dimensions. Therefore, the characteristics of integrative-multidimensional science are neither neutral nor value-free.

Second, the structure and characteristics of integrative-multidimensional science in the perspective of Islamic epistemology have coherence and relevance to Islamic science. As a matter of fact, Islamic epistemology also places all human potentials, namely senses, reason, and intuition as the source of knowledge. However, above the senses, reason, and intuition, there is revelation originating from God. Hence, the sources of knowledge recognized in Islamic epistemology include the senses, reason, intuition, and revelation from Allah the creator of the universe. All recognized sources of knowledge occupy their respective domains and have complementary and integrative roles. In integrative-multidimensional science and Islamic epistemology, all of these sources of knowledge have not been reduced and marginalized as in modern science developed by the West. Integrative-multidimensional science and Islamic science do not have ontological, epistemological, and axiological differences. Both have the same object of study, i.e. the verses of Allah which include the *qauliyah* verses (written in the Quran), the *kauniyah* verses (seen across the universe), and the *nafsiyah* verses (found in men). These three components have triggered scientists to produce humanist-theocentric science, or a science that is based on divinity and humanity, which is not value-free.

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