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Dimensions of Islamization in the Development of Science

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Abstract : *Scientific problems are indeed an interesting issue to be researched. Moreover, seeing the development of science globally in the West is not based on God's revelation and guidance. Although this knowledge can then produce technology that facilitates human life's affairs, this convenience is accompanied by nature exploitation and destructive moral degradation. This Western view of life is certainly not compatible with the monotheistic Islamic point of view. Given the differences in seeing reality and truth, scientific studies need to be reconstructed and linked to religion as a form of applicative integrative method that does not place religion as a foreign matter in science. In response, Muslim scholars offered alternative ideas in a discourse on the integration of religion and science called the Islamization of contemporary science. With the critical analysis method, the authors sought to reveal the dimensions of Islamization that could touch the root of the science problem (epistemological) and answer the scientific development problems. Islamization is expected to be a universal framework that not only can be used by Muslims but also non-Muslims.*

Keywords : *Islamization, Epistemology, Paradigms, Integration, Science*

Abstrak : *Problem keilmuan memang merupakan issue yang menarik untuk diteliti. Apalagi melihat perkembangan ilmu secara global di Barat tidaklah berlandaskan pada wahyu dan tuntunan Ilahi. Walaupun keilmuan tersebut kemudian mampu menghasilkan teknologi yang memudahkan urusan hidup manusia, namun kemudahan tersebut ternyata dibarengi dengan adanya eksploitasi alam dan degradasi moral yang merusak. Pandangan hidup Barat yang seperti ini tentunya tidak berkesesuaian dengan cara pandang Islam yang Tauhidi. Dengan adanya perbedaan dalam melihat realitas dan kebenaran, kajian keilmuan perlu di rekonstruksi dan di hubungkan dengan agama sebagai bentuk metode integratif aplikatif yang tidak meletakkan agama sebagai hal asing dalam keilmuan. Merespond hal tersebut, para cendekiawan Muslim menawarkan gagasan alternatif berupa wacana integrasi agama dan sains yang dinamakan islamisasi ilmu pengetahuan kontemporer. Dengan metode analisis kritis, penulis berupaya mengungkap dimensi-dimensi Islamisasi yang dapat menyentuh akar persoalan ilmu (epistemologis) dan mampu menjawab persoalan pengembangan keilmuan. Islamisasi diharapkan mampu menjadi framework universal yang tidak hanya bisa dipakai oleh kalangan Muslim, tapi non-Muslim pun dapat menggunakannya.*

Keywords : *Islamisasi, Epistemologi, Dimensi, Paradigma, Integrasi, Ilmu Pengetahuan*

A. Introduction

Integrating science and religion as a significant theme of the intellectual movement in recent decades cannot be stopped. This idea arose from the anxiety of scholars about the dichotomy of science and the destructive influence of secularism. The separation between science and religion implied that the history of the relationship between them was not harmonious. Even technological and scientific advances were considered to have nothing to do with religion but were only obtained by the contribution of science itself.¹ In addition, the thing that needs to be considered regarding science is its naturalistic approach (excluding all parties related to the supernatural and spiritual) so that it denies the vital role of religion and even God, who is the most important.

The objection to the view of disintegration sparked hopes for the emergence of new and integrative science with a touch of religion, especially after seeing the potential of Muslims who are gradually becoming more

¹ Mohammad Muslih, *Falsafah Sains: Dari Isu Integrasi Keilmuan Menuju Lahirnya Sains Teistik* (Yogyakarta: LESFI, 2017), bk. 101.

westernized and secularized.² It seems that the idea of unification of science and religion was no exception to the Islamization idea. It has even exceeded expectations and was considered not only to dwell on the discourse stage but will lead to (or have already led) at the stage of the *scientific paradigm*. In discussing this paradigm, the idea of integration in this article reviewed one of its variants. The theme of Islamization of science will not stop talking "win-lose" or "right-wrong" with other ideas.³ Instead, it will turn to the significance of Islamization as a scientific paradigm that will produce Islamic science.

In response to this, this article examined and explored the latest developments in the idea of Islamization as a scientific paradigm with its dimensions expected to lead to operational and systematic steps in the form of scientific activities capable of producing Islamic science.

B. Theoretical Framework

In this article, the author attempted to see the scope of Islamization from the paradigm dimension, including ontological, epistemological, axiological, and epistemological dimensions. The paradigm itself is a critical term in the philosophy of science stated by Thomas S. Kuhn, which he delivered in *The Structure of Scientific Revolutions*. In his work, Kuhn stated that the theory and methodology of science fall under the auspices of a "paradigm." A paradigm is a set of basic assumptions of scientists used as a research principle and interpretation.⁴

Paradigm is present as a form of Kuhn's criticism of the neutrality of science, which according to him, is merely a delusion. His argument strengthens Kuhn's rebuttal that all kinds of experiments carried out by scientists, the types of questions asked, and the problems they consider

² Nik Ahmad Hisham Ismail, Mustafa Tekke, and Faizah Idrus, "Islamization of Knowledge in The Curriculum Among Academics at The International Islamic University Malaysia: A Structural Equation Modeling (SEM) Approach", *Al-Shajarah*, no. Special Issue: Education (2017): p. 55, <https://journals.iium.edu.my/shajarah/index.php/shaj/article/view/564>.

³ Mohammad Muslih, Happy Susanto, and Martin Putra Perdana, "The Paradigm of Islamization of Knowledge According to SMN Al-Attas (From Islamization of Science to Islamic Science)," *Tasfiah: Jurnal Pemikiran Islam*, 2021, p. 26, <https://doi.org/10.21111/tasfiah.v5i1.5269>.

⁴ Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago: Chicago University Press, 1970), pp. 43–51.

essential are never separated from their respective paradigms. A paradigm is considered a set of general theoretical assumptions, laws, and applied techniques that members of the scientific community hold.⁵ According to Kuhn, without a paradigm, scientists will not collect facts. It means that the development of science is primarily determined by the paradigm that overshadows it.⁶

In strengthening Kuhn's opinion about the "paradigm," Gareth Morgan and Gibson Burrell then add that paradigm makes the scientists easier to measure whether the object they have been researching is worthy of becoming a *scientific paradigm*. They offer dimensions that include paradigms, namely ontological, epistemological, axiological, and methodological.⁷ Through Gareth and Morgan's explanations, the authors attempted to measure the Islamization feasibility of contemporary science as a scientific paradigm that is expected to produce Islamic science later.

To see the reality of Islamization, the authors used a *qualitative method*⁸ in seeing the existing reality. Qualitative methods were used to solve theoretical problems, carefully defining a concept. In the qualitative method, the final objective of the analysis is crucial because the analysis could be used as the key to answering the wanted variables.⁹

The authors used a conceptual approach in looking at the problem. The authors analyzed the problems by offering the Islamization concept as a drug variant to anesthetize the problem. It was then accompanied by a comparative approach between Islamization and secular Western concepts. The data collection method used the *library research* method by collecting data from various books and related journals.

⁵ Mohamad Anas, "Disruption and Incommensurability Among Thomas S. Kuhn's Paradigms," *Kalam* 15, no. 1 (2021): p. 105, <https://doi.org/10.24042/klm.v15i1.7380>.

⁶ Kuhn, *The Structure of Scientific Revolutions*, pp. 43–51.

⁷ Gareth Morgan and Gibson Burrell, *Sociological Paradigms and Organizational Analysis: Element of the Sociology of Corporate Life* (London: Heinemann, 1979), pp. 1–2.

⁸ Hasbiyallah et al., "Memotret Wajah Islam Melalui Perguruan Tinggi Keagamaan Islam Negeri Di Indonesia," *Khazanah: Jurnal Studi Islam Dan Humaniora* 17, no. 2 (2019): p. 232.

⁹ Heddy Shri Ahimsa Putra, "Paradigma, Epistemologi Dan Etnografi Dalam Antropologi," in *Perkembangan Teori Dan Metode Antropologi* (Surabaya: Departemen Antropologi Fakultas Ilmu Sosial dan Ilmu Politik, Universitas Airlangga, 2011).

C. Islamization in the Discourse of the Integration of Science

Efforts to integrate science emerged from several Muslim scientific experts who offered¹⁰ alternative knowledge concepts based on Islam. It was inspired by the dichotomy¹¹ of science caused by the West's secularisation. With the strong influence of secularism, people, especially those in the West, have formed a scientific discipline that had no connection with religion. However, in the Islam perspective, the disharmony or division between science and religion negatively impacts.¹² The secular approach is too radical in exploiting nature, separating political affairs from religion, and tending to separate public affairs from religion as a whole.¹³ As a result, the secular Western sciences replaced the religious sciences in the education method in schools, which resulted in a secular education system, with the orientation of seeking knowledge not solely for the sake of Allah but for the sake of material wealth and splendor, being selfish, nationalist, and trying to eliminate religious knowledge.¹⁴

The hard Western science received much criticism from foreign Muslim scientists¹⁵, who then called for the discourse of integration to fight

¹⁰ To create a connected discourse between Islam and science, Muslim scientists and religious scholars need to engage in the history of Islamic science, including a review of the transition and transmission of Islamic science to Western thought. See: Ted Peters and Gaymon Bennet, *Bridging Science and Religion*, ed. Jessica Christiana (Jakarta: Gunung Mulia, 2006), p. 219.

¹¹ Dichotomy can be interpreted as a detailed and clear separation of one type into two separations from each other, where one cannot be included at all, and vice versa. See: Muhammad Mustaqim, "Pengilmuan Islam Dan Problem Dikotomi Pendidikan," *Jurnal Penelitian* 9, no. 2 (2015): p. 259.

¹² This negative impact, according to Wan Mohd Wan Daud, is based on two things: *First*, because of a lack of knowledge about what should be known, and *second*, because of false beliefs that contradict facts and reality, believing in something different from the thing itself, or doing things differently than they should. See: Wan Mohd Wan Daud, "Epistemologi Islam Dan Tantangan Pemikiran Umat," *Islamia* 2, no. 5 (2005): p. 52.

¹³ Mohd Roslan Mohd Nor and Muhammad Khalis Ibrahim, "Conflicts of Religious Education in a Secular State: A Study on Turkey's Imam-Hatip School," *Qudus International Journal of Islamic Studies* 8, no. 1 (2020): p. 108, <https://doi.org/10.21043/QIJS.V8I1.5849>.

¹⁴ Mohd Nasir Omar, *Gagasan Islamisasi Ilmu: Pada Era Klasik, Tokoh-Tokoh Falsafah Sains Islam Mempelajari Pemikiran Greek Dan Lain-Lain Tamadun Dan Lantas Sekaligus Membina Suatu Badan Ilmu Buerkualiti Tinggi* (Kuala Lumpur: Utusan Publication & Distributors Sdn Bhd, 2005), p. 1.

¹⁵ Some observers of the idea of Islamization of science include: Syed Muhammad Naquib al-Attas, Ismail Raji al-Faruqi, Seyyed Hossein Nasr, Ziauddin Sardar, Jaafar Sheikh

the Westernization of the West. It was better known as the *Islamization of science*. They simultaneously argue that science developing in the West and the Muslim world nowadays is not *value-free*¹⁶ but is *value-laden*. The values embodied in Western science such as secularism, materialism, rationalism, empiricism, idealism, and positivism have damaged the way of thinking a lot because these ideas keep away people from spiritual and religious values.¹⁷

The idea of Islamization of knowledge is a specific issue. It has become an Islamic intellectual discourse that has attracted much attention from contemporary Muslim thinkers from various parts of the world, such as Syed Muhammad Naquib al-Attas, Ismail Rajji al-Faruqi, Sayyed Hossein Nasr, and Ziauddin Sardar. The four significant differences between the four initiators of Islamization lie in emphasizing the object and subject of Islamization. Furthermore, Al-Attas emphasizes Islamization on science itself, especially the human aspect.¹⁸ The concept of Islamization brought by Al-Attas seeks to free the human mind from doubt (*shakk*), conjecture (*dzann*), and the empty argument (*mira'*) towards the belief in the truth about spiritual, intelligible, and material reality.¹⁹ Meanwhile, Al-Faruqi focuses on the importance of carrying out Islamization with his efforts in Islamizing various materials and basic books that are commonly used in the teaching and learning process in universities. Islamization of knowledge for al-Faruqi is compiling, defining, thinking about, evaluating, and re-projecting the entire legacy in the form of data, conclusions on data, and the purpose of human knowledge from an Islamic point of view.²⁰

Idris, Thaha Jabir Al-Awani, Ibrahim Ragab, and Osman Bakar. See: Budi Handrianto, *Islamisasi Sains: Sebuah Upaya Mengislamkan Sains Barat Modern* (Jakarta Selatan: INSIST, 2019), p. 171.

¹⁶ The fact is, the secular sciences that claim to be free from values and interests (value-free) are full of interests. These interests include: the dominance of economic interests (expansion of strong countries in the era of globalization), military/war interests (such as nuclear science), and the dominance of Western cultural interests (orientalism). See: M. Amin Abdullah, *Islamic Studies Di Perguruan Tinggi: Pendekatan Integratif-Interkonektif* (Yogyakarta: Pustaka Pelajar, 2010), p. 104.

¹⁷ Handrianto, *Islamisasi Sains: Sebuah Upaya Mengislamkan Sains Barat Modern*, p. 14.

¹⁸ Wan Mohd Wan Daud, *Filsafat Dan Praktik Pendidikan Islam: Syed M. Naquib Al-Attas*, ed. Hamid Fahmy Zarkasyi (Bandung: Anggota IKAPI, 2003), p. 336.

¹⁹ *Ibid.*, p. 336.

²⁰ Ismail Raji Al-Faruqi, *Islamization of Knowledge: General Principles and Work Plan* (Herndon Virginia: IIIT, 1991), p. 23.

Meanwhile, Sayyed Hossein Nasr more focuses on the Islamization of what methodology will be used by modern science. For Nasr, Islamization is the integration of contemporary science under the auspices of the Islamic worldview. This integration can be done by integrating educational models: traditional and modern. Traditionally refers to Islamic learning methods, such as memorizing the Qur'an, studying Arabic grammar, and the main points of religious teachings. At the same time, modern refers to modern educational methods that teach contemporary sciences.²¹

Furthermore, Ziauddin Sardar focuses his studies on the epistemological Islamization of contemporary Western Science. According to Sardar, Islamization refers to the Islamization of the epistemology of contemporary Western science, not the Islamization of disciplines such as psychology, economics, physics, biology, etc. According to Sardar, the problem is not the discipline of science but the epistemological structure on which science concentrates. Therefore, Islamization is a critical study of the epistemology of contemporary Western science through the development of a new [scientific] paradigm that fits within the conceptual category and framework of Islamic values.²²

According to several other Muslim scholars, such as Abdul Karim Soroush, a radical Iranian author, rejects the idea of Islamizing this knowledge. He assumes that knowledge that "has been Islamized" does not mean to be perfect. Science is only limited to the study of changing phenomena. Reality is fixed and does not change. However, al-Attas dismisses it with the argument that reality is both fixed and changing simultaneously, not in the sense that the change is permanent, but in the sense that the change occurs through something constant.²³

This opinion is in line with **Muhsin Mahdi's** opinion, a famous historian of Islamic philosophy and historiographer from Harvard who thinks science is compatible with religion in various aspects. Mahdi rejects the idea of Islamic science as a term that has been used today. Mahdi argues that the idea of Islamic science is the result of the philosophy of religion as it is understood today and not as it is generally understood in Islamic history.

²¹ Sayyed Hossein Nasr, *A Young Muslim's Guide to the Modern World* (Chicago: Kazi Publication, 1994), pp. 129–130.

²² Ziauddin Sardar, *Rediscovery Islamic Epistemology in Islamic Futures: The Shape Ideas to Come* (Kuala Lumpur: Pelanduk Publication, 1988), pp. 89–100.

²³ Handrianto, *Islamisasi Sains: Sebuah Upaya Mengislamkan Sains Barat Modern*, p. 205.

Even according to him, there is no Islamization definition that Muslims worldwide can accept to date.²⁴

In answering this question, Prof. Aparslan Acikgence²⁵ argues that the adjective "Islam" used to describe new ideas, scientific disciplines, and institutions is a new development that needs to be made. It is in line with the views of scholars such as Al-Attas. They realize that the ideas and practices of several scientific disciplines and institutions, mostly taken and sourced from abroad, are not relevant to the Islamic worldview and cultural and social. Therefore, the labeling of 'Islam' is vital. In the past, Muslims did not use the term "Islam" because they were the world's rulers who did not get much pressure from the outside, unlike now.²⁶

In Bassam Tibi's view, the Islamization of knowledge is considered *indigenization*. Tibi understands the Islamization of Science as a third-world response to the claim of the universality of Western science. He thinks that Islamization can reaffirm local (values) to oppose the invading global science.²⁷ However, this idea is incorrect and seems to have political and sociological content. Just because the West is superior to the Islamic world, the notion of Islamization is considered a local idea instead of a global one. The emergence of Islamization is a form of response to the different *worldviews* of the West and Islam, not only criticizing Western global culture and civilization.²⁸ Islamization also transforms local forms to fit the Islamic worldview. Islamization is to make cultural forms, customs, traditions, and universal localities following the universal religion of Islam.²⁹

Not only abroad, but the discourse of integration³⁰ in Indonesia has also been quite stretched. It can be seen that awareness about the Indonesian

²⁴ Daud, *Filsafat Dan Praktik Pendidikan Islam: Syed M. Naquib Al-Attas*, pp. 418–419.

²⁵ See: Aparslan Acikgence, *Lahirnya Tradisi Keilmuan* (Jakarta: INSIST, 2019).

²⁶ Daud, *Filsafat Dan Praktik Pendidikan Islam: Syed M. Naquib Al-Attas*, p. 418.

²⁷ Syaiful Anwar, *Melindungi Negara* (Jakarta: Yayasan Pustaka Obor Indonesia, 2016), p. 208.

²⁸ Adnin Armas, "Westernisasi Dan Islamsasi Ilmu," *Islamia* 2, no. 6 (2005): p. 17.

²⁹ Daud, *Filsafat Dan Praktik Pendidikan Islam: Syed M. Naquib Al-Attas*, pp. 423–425.

³⁰ George Sarton explained that science and religion are inseparable and cannot be understood one's side without understanding the other. It is because the reality of the development of science itself cannot be separated from the beliefs held by each figure. In this case, Sarton recommends that to understand science properly, a Muslim must fully understand his tendencies around the Qur'an. See: Wido Supraha, *Pemikiran George Sarton*

Muslims' perceptions regarding religious practices is getting intense.³¹ It then brought up several Indonesian Muslim scholars such as Kuntowijoyo, Heddy Shri Ahimsa-Putra, Amin Abdullah, Armahedi Mahzar, and Mulyadi Kartanegara. They were concerned in their efforts to integrate general knowledge and religion. Departing from prophetic science, Kuntowijoyo then formulates the "Islamic Science" concept. The idea offered by Kunto is somewhat different. When many people mention the Islamization of knowledge, he argues that Islamic science is correct. With the Islamic science concept, Kuntowijoyo wants 'Islam as a science' because Islam itself is a science.³²

With Islam as a science, Kuntowijoyo puts revelation as a vital source of knowledge and the owner of the highest authority. Making revelation as a source of knowledge is an acknowledgment of the transcendental structure in interpreting reality. That is, recognizing that the Qur'an is a structure that has a transcendental building of ideas and has an autonomous and perfect system.³³ This concept was then continued and developed by Ahimsa Putra with the "Prophetic Paradigm" concept. He claims that in the prophetic paradigm, integration is done by first placing the Qur'an and Hadith as the primary source of knowledge and monotheism as a framework or paradigm, then integrating the means of achieving knowledge and integrating sources of knowledge.³⁴

Amin Abdullah also offered the idea of integration. He viewed a study as planned, made from a concept, and written systematically, which is then communicated, taught, disseminated orally, or in writing as Islamic science. Amin's version of Islamic science is a regular science concept planned and formulated by religious values, scholars, *fuqaha*, *mutakallimin*,

Dan Panduan Islamisasi Sains: Referensi Supervisi Pengembangan Bahan Ajar Pendidikan Islam (Depok: Yayasan Adab Insan Mulia, 2018), p. 147.

³¹ Yanwar Pribadi, "Identity Contested: Cultural Resilience in the Midst of Islamization of Politics," *Al-Jami'ah* 56, no. 2 (2018): p. 265, <https://doi.org/10.14421/ajis.2018.562.255-280>.

³² Ari Anshori, *Paradigma Keilmuan Perguruan Tinggi Islam: Membaca Integrasi Keilmuan Atas UIN Jakarta, UIN Yogyakarta, Dan UIN Malang* (Jakarta Selatan: Al-Wasat Publishing House, 2018), p. 5.

³³ Kuntowijoyo, *Islam Sebagai Ilmu: Epistemologi, Metodologi, Dan Etika* (Yogyakarta: Tiara Wacana, 2006), pp. 17–18.

³⁴ Putra, "Paradigma, Epistemologi Dan Etnografi Dalam Antropologi," pp. 77–103.

mutasawwifin, mufassirin, muhadditsin in the past in responding to humanitarian and religious problems.³⁵

Amin's version of Islamic science ideas later gave birth to the "Integration-Interconnection" discourse. The integrative-interconnective approach attempts to reconcile and connect religious scholarship and general science.³⁶ This interconnection paradigm responds or answers to the difficulties felt so far regarding the dichotomy between general education and religious education. Integration-interconnection is two different words but has the same intent and purpose, namely combining and linking two issues considered separate. In this case, studying or learning about a particular field while still looking at other scientific fields is the integration. Meanwhile, seeing the interrelationships with various scientific disciplines is meant by interconnection.³⁷

Meanwhile, Imam Suprayogo offered the idea of "Integrating the Tree of Knowledge." By reconstructing scientific concepts by placing religion as the basis of knowledge, Imam Suprayogo offers scientific integration through the metaphor of the "Tree of Knowledge." The metaphor used is a sturdy tree that has shady branches, has fertile leaves, and bears heavy fruit because strong roots support it. *Tree roots* that firmly pierce the earth describe science as a tool that must be mastered, such as Arabic and English, Logic, introduction to the Natural Sciences, and Social Sciences. Strong *tree branches* illustrate studies from sources of Islamic teachings, namely the Qur'an and Hadith, Islamic thought, *Sirah nabawiyah*, and Islamic history. Meanwhile, the pretty large *branches* represent several sciences in general with various branches, such as natural sciences, social sciences, and humanities.³⁸

Furthermore, Mulyadi Kartanegara launched the idea of "the Integration of the Unity of Being." He formulated that two fundamental theses underlie the scientific integration of the unitary model of being. First, there is a dichotomy of science into religious science and non-religious science. However, integrating general science and religion cannot be

³⁵ Fathul Mufid, "Islamic Sciences Integration," *QIJS (Qudus International Journal of Islamic Studies)* 2, no. 2 (2014): bk. 146, <https://doi.org/10.21043/qijis.v2i2.1565>.

³⁶ Fathul Mufid, "Integrasi Ilmu-Ilmu Islam," *Equilibrium* 1, no. 1 (2013): p. 64.

³⁷ M. Amin Abdullah, *Islamic Studies Di Perguruan Tinggi: Pendekatan Integratif-Interkonektif* (Yogyakarta: Pustaka Pelajar, 2006), p. viii.

³⁸ Imam Suprayogo, *Universitas Islam Unggul* (Malang: UIN-Malang Press, 2009), p. 166.

achieved by uniting two knowledge groups. It takes the concept of the unity of reality or being to integrate all levels of science (ontology, epistemology, and methodology). In the concept of the unity of being, all existing forms (with all their forms and characters) are essentially the same.³⁹

Mulyadi adds that what distinguishes one form from another is only the gradation (*tasykik al-wujud*) caused by differences in its essence. Therefore, all beings are the same, so any existence that we know of, whether spiritual or material, must have an ontological status that is equally strong and real. In this way, all levels of being can become valid objects for science because their ontological reality has been defined.⁴⁰

Armehdi Mahzar, with "Pentadic Integralism," has begun to concentrate on expressing his scientific ideas. The integration of science that he developed is called pentadic integralism. This integralism seeks to correct the tetradic integralism developed by Ken Wilber. The weakness of Wilber's tetradic integration is that it puts all kinds of knowledge on par with one another. According to Armahedi Mahzar, knowledge is not parallel but hierarchy or level. If Wilber's universal integralism has the categories of objectivity, interobjectivity, intersubjectivity, and subjectivity, then Armahedi Mahzar's Islamic integralism has the categories of matter, energy, **information, and values. In Islam's integration, there is a fifth category, namely the source, which is the essential source of values.**⁴¹

Based on the description above, we could conclude that the discourse of integration in which Islamization was a new stage. Muslim scholars have a new spirit of tradition with their efforts to integrate modern science with Islamic sciences, which is difficult to contain. However, the problem is that the developing discourses on integration have not been **established yet as a paradigm, seeing that it has not met the paradigm's elements.** Then, some criticisms that accompany it occur.

³⁹ Mulyadi Kartanegara, "Integrasi Ilmu Pengetahuan: Itulah Islam," in *On Islamic Civilization: Menyalakan Lentera Peradaban Yang Sempat Padam*, ed. Laode M. Kamaluddin (Semarang: UNISSULA Press, 2010), p. 35.

⁴⁰ *Ibid.*, p. 35.

⁴¹ Armahedi Mahzar, "Integrasi Sains Dan Agama: Model Dan Metodologi," in *Integrasi Ilmu Dan Agama: Interpretasi Dan Aksi*, ed. Zainal Abidin Bagir (Bandung: Mizan, 2005), p. 100.

D. The Idea of Islamization of Science: The Dimensions Contained

In general, what critics of the idea of Islamization do is argue that science is the study of facts, the objective and independence of humans, culture, or religion, and must be separated from values. However, in the West itself, many scientists and philosophers have criticized the idea of "science is value-free". The most accurate criticism in the author's view is the emergence of Thomas S. Kuhn entitled *The Structure of Scientific Revolutions*. In his work, Kuhn stated that the theory and methodology of science fall under the auspices of a "paradigm". A paradigm is a set of basic assumptions of scientists used as a research principle and interpretation.⁴²

Kuhn thought the idea of scientific neutrality was just an illusion. He believes that paradigm determines the types of experiments scientists do, the types of questions they ask and the problems they consider necessary. **Without a particular paradigm, scientists cannot even gather "facts".**⁴³ It means that this paradigm determines science development. Everything is considered right and wrong, depending on the paradigm. Kuhn gives an example of how paradigms play an essential role in the development of science, namely that the classic paradigm shift from geocentric to heliocentric. It is a paradigm shift. The geocentric concept is considered wrong because scientists have had a new paradigm model interpreting reality.⁴⁴

The problem is why many people think that science is not neutral because everyone interprets something based on something that is considered valid and authentic for him. Their belief about what is accurate and authentic makes the product of the worldview different. Therefore, the option of Islamization is correct as an effort to correct wrong understandings and fight the hegemony of westernization of science which is currently permeating the body of world civilization today. The building of a theory of science is very dependent on the paradigm of science itself.⁴⁵

⁴² Kuhn, *The Structure of Scientific Revolutions*, pp. 43–51.

⁴³ *Ibid.*, pp. 43–51.

⁴⁴ *Ibid.*, pp. 152–153.

⁴⁵ Kuhn explains that it is the paradigm that determines the types of experiments scientists carry out, the types of questions they ask, and the issues they consider important. Without a certain paradigm, it seems that scientists find it difficult to gather facts. In the absence of a particular or candidate of a paradigm, all facts that may be in line with the development of a particular science appear as if they are appropriate and relevant. As a result, the collected fact is almost entirely a random activity. See: Mohammad Muslih, *Filsafat Ilmu*:

Thomas Samuel Kuhn first introduced the term paradigm in his work entitled "*The Structure of Scientific Revolutions*," which shocks the dominance of the positivistic paradigm. This book contains a problem and a solution.⁴⁶ Kuhn defines paradigm as a combination of study results consisting of concepts, values, techniques, etc., that are used together in a community to determine a problem validity and its solution.⁴⁷

After knowing the paradigm definition, the next question is how one develops a scientific paradigm and how to know the paradigm used by a scientist. Paradigm is one of the most critical parts in science building that should not go unnoticed.⁴⁸ Furthermore, Burrell and Morgan⁴⁹ develop this paradigm aspect in the meta-theoretical assumptions that underlie the frame of reference, theoretical model, and modus operandi of scientists within the paradigm.⁵⁰ It can be traced from the answers to four basic questions that become the philosophical and methodological aspects in finding knowledge, namely: the ontological dimension, the epistemological dimension, the axiological dimension, and the methodological dimension.⁵¹

Based on the four fundamental dimensions above, Burrell and Morgan developed aspects of the paradigm in the meta-theoretical assumptions that underlie the frame of reference, theoretical models, and methodologies of scientists within the paradigm. Burrell and Morgan described four paradigm models. The four paradigms did not indicate the complete similarity of views on reality because scientists must have different views in each paradigm. The similarity shown only in the basis and assumptions distinguishes one paradigm from another.

Moreover, according to Kuhn, Burrell, and Morgan's description, we can conclude that Islamization is relevant in developing science. The reason is Islamization. There are basic assumptions mentioned by Kuhn as well as

Kajian Atas Asumsi Dasar, Paradigma Dan Kerangka Teori Ilmu Pengetahuan (Yogyakarta: LESFI, 2016), p. 136.

⁴⁶ *Ibid.*, p. 124.

⁴⁷ Kuhn, *The Structure of Scientific Revolutions*, bk. 170.

⁴⁸ Muslih, Susanto, and Perdana, "The Paradigm of Islamization of Knowledge According to SMN Al-Attas (From Islamization of Science to Islamic Science)," p. 31.

⁴⁹ Morgan and Burrell, *Sociological Paradigms and Organizational Analysis: Element of the Sociology of Corporate Life*, p. 1.

⁵⁰ Erlina Diamastuti, "Paradigma Ilmu Pengetahuan: Sebuah Telaah Kritis," *Jurnal Akutansi Universitas Jember* 10, no. 1 (2012): bk. 63.

⁵¹ Morgan and Burrell, *Sociological Paradigms and Organizational Analysis: Element of the Sociology of Corporate Life*, pp. 1–2.

four ontological, epistemological, axiological, and methodological dimensions as follows:

1. The Ontological Dimension in Islamization

In Islam, something is called "real" based on a metaphysical vision of the ultimate being and reality. The vision is taken directly from revelation, not rational-philosophical speculation. **The supreme 'being' and reality refer to God, the central element in Islamization.** According to al-Attas, ontologically, Islam does not merely recognize the existence of a material reality that is sensed but also recognizes the existence of various levels of existence. In general, the reality is divided into God and other than God, namely nature. Nature as reality consists of the phenomenal realm, the spiritual realm, and the realm of fixed entities, in which al-Attas emphasizes that the phenomenal and material realms are by no means the only level of reality.⁵²

Al-Attas emphasizes that the existence of God is recognized as a fact and the truth.⁵³ In Islam, God, reality, and truth are represented by one word, namely *al-Haqq*—on the one hand, it is one of God's 99 names (*Asmaul Husnah*), and on the other hand, it refers to reality and truth or *haqiqah*. Thus, *haqq* refers to the epistemological and ontological aspects. In the epistemological aspect, God is the source of knowledge and truth. In contrast, in the ontological aspect, God is the source of reality, where other realities besides God obtain existence from Him through creation.

The conclusion drawn in the Islamization paradigm is ontological. The reality is empirical and non-empirical; *visible* and *invisible*, physics and metaphysics. Therefore, the object of knowledge in the Islamization paradigm is extensive, which includes: sensory, intellectual, and spiritual experiences. Thus, practically, if the Islamization paradigm is used in the scientific community today, new study programs can appear within the university because they have a broad scope of the study.

2. Epistemological and Axiological Dimensions in Islamization

On the epistemological side, the researcher's relationship with the object is interactive and inter-subjective (cannot be separated between the object who knows and the subject who is known). In the Islamic scientific paradigm, the source of knowledge is not only empirical reality or comes

⁵² Daud, *Filsafat Dan Praktik Pendidikan Islam: Syed M. Naquib Al-Attas*, p. 104.

⁵³ Syed Muhammad Naquib Al-Attas, *Islam Dan Filsafat Sains*, ed. Zainal Abidin Baqir (Bandung: Mizan, 1995), p. 47.

from sensory perception but also a revelation, reason, and heart (intuition).⁵⁴ Axiologically, because the relationship between the researcher or the research's subject and the object is inseparable, the values adopted by a Muslim scientist can affect his scientific product. It means that science is *not value-free* but is *value-laden*.⁵⁵

Besides being interactive and inter-subjective, in Islamization epistemology, the intuition side in acquiring knowledge through the illuminative process is emphasized. The nature of the acquisition of knowledge and the attainment of absolute truth⁵⁶ is the "union" between the subject and the object of knowledge.⁵⁷ It should be noted, however, that the intuition described here is different from the intuition defined by most Western thinkers, which only relates intuition to *sensational elements* as developed by Western thinkers. One of them is Henry Bergson (1859-1941).⁵⁸

Intuition, as explained by al-Attas, is not only the *direct and immediate* introduction of the subject of science to the external world but also the truth of ratios and universal values. Nevertheless, intuition is a **direct and rapid recognition of the religious truth, namely God's reality and existence**. This knowledge is obtained through a higher level of intuition called *intuition of existence*. This intuition, according to al-Attas, is the work of the heart (*qalb*).⁵⁹

⁵⁴ Al-Attas, p. 34.

⁵⁵ Syed Muhammad Naquib Al-Attas, *Islam Dan Sekularisme*, ed. Khalif Muamar (Bandung: PIMPIN, 2010), p. 169.

⁵⁶ According to Suhrawardi, to obtain the ultimate truth or metaphysical truth, it can only be obtained by firstly making an effort to be aware of oneself. Because, according to Suhrawardi, true knowledge of something, in this case, metaphysical truth can only be obtained by realizing the subject of itself early. Then, the subject who has realized about themselves can establish a direct relationship with the object of knowledge. Thus, both the subject and the object of knowledge are required to be exist. See: Hossein Ziai, *Knowledge and Illumination: A Study of Suhrawardi's Hikmat Al-Isyraq* (Brown Judaic Studies 97 Scholars Press, 1990), p. 174.

⁵⁷ Mehdi Ha'iri Yazdi, *Menghadirkan Cahaya Tuhan: Epistemologi Illuminasionis Dalam Filsafat Islam*, ed. Husein Hariyanto (Bandung: Mizan, 2003), p. 32.

⁵⁸ Dinar Dewi Kania, "Pemikiran Epistemologi Al-Attas," *Islamia* 9, no. 2 (2017): p. 28.

⁵⁹ Syed Muhammad Naquib Al-Attas, *Prolegomena to the Metaphysics of Islam: An Exposition of the Fundamental Elements of the Worldview of Islam* (Johor Baru: UTM Press, 2014), p. 119.

In Islamization epistemology, the emphasis is on the intuitive process of perception and intellection. Thus, it confirms that acquiring knowledge is a spiritual activity which is the fundamental difference between Islamic and Western epistemology. Cognitive involvement in epistemology involves the material world and the intellect, or the body and mind. This statement is an Islamic epistemology's characteristic, as described by al-Attas, which unites Rationalism and Empiricism, as well as affirms *a priori* knowledge and *a posteriori* knowledge. In the epistemology described by al-Attas, reason and intuition are connected through the medium of the intellect.⁶⁰

3. Methodological Dimensions in Islamization

In terms of methodology, studies in the scientific paradigm of Islamization are not only carried out in the field or the wild in revealing phenomena (*tajribi*), but also be done through textual studies in an analogical-syllogistic (*bayani*) and rational (*burhani*) way as well as through spiritual experience (*'irfani*).⁶¹ It means that there is no negation between one methodology and another in the Islamic scientific paradigm, but everything is accommodated and integrated. This integration is based on the limitation of science objects by modern science only on physical objects, resulting in the primary method that is considered valid is sensory observation.⁶²

However, in the Islamic scientific tradition, the object of knowledge is not only limited to the sensory world but also non-sensory. Therefore, the scientific method should be developed on the methods that can be used to observe and study non-sensory entities. Muslim scientists then made other scientific methods in studying non-sensory entities. To be able to capture non-physical objects such as souls, God, and angels as well as universal concepts which are immaterial in themselves, demonstrative methods or rational methods are used. Then, to understand non-physical objects that the mind cannot reach, Muslim scientists also add the *'irfani* method, namely direct experience without going through the mediation of the senses or reason.⁶³

⁶⁰ Kania, "Pemikiran Epistemologi Al-Attas," p. 28.

⁶¹ Mulyadi Kartanegara, *Integrasi Ilmu: Sebuah Rekonstruksi Holistik* (Bandung: Arasyi, 2005), p. 132.

⁶² *Ibid.*, pp. 132–147.

⁶³ *Ibid.*, pp. 132–147.

In short, in the scientific paradigm of Islamization, the scope of the study is very broad because the object of science corresponds to the whole series of realities, both visible (physical) and invisible (metaphysical) realities. Due to the broad scope of the study, the methodology also varies. It can be empirical-experimental or *tajribi*, analogical-syllogistic (*bayani*), rational-speculative (*burhani*), and mystical-spiritual (*'irfani*). All these objects and methodologies are directed by permanent revelation so that the **methodologies' diversity is not contradictory but integrated.**

In addition to those mentioned above, the Islamization Paradigm also has a cosmological dimension. According to Seyyed Hossein Nasr, the **main principle of Islamic cosmology is to establish God's oneness. God, in the concept of *gradation of being*, metaphysically asserts that reality is only one, but this universe that can be perceived by the senses and can be thought of is one of the manifestations of the One Being. In Islamization cosmology, the unity and interconnectedness of all existence always refer to and lead to the awareness of God's Oneness.**⁶⁴

According to Gareth Morgan and Gibson Burrell's explanation about the various paradigms and their development above, it can be concluded that the scientific paradigm in the Muslim intellectual tradition has fundamental aspects that distinguish it from the Western paradigm. It is due to five things. *First*, in the Islamization Paradigm, reality and truth are interpreted based on a metaphysical study of the *visible and invisible worlds*.⁶⁵

Even though it has such dimensions, scholars like Fazlur Rahman⁶⁶ argue that science cannot be Islamized because there is nothing wrong with science. Rahman argues that science does not need to be Islamized because the problem is misusing that knowledge. Rahman thinks that knowledge has two qualities, such as a "double-edged weapon" that must be used carefully and reliably so that it is not easily misused. Rahman's omission in the analysis here is that every science is built by a specific *worldview*. Furthermore, it

⁶⁴ Seyyed Hossein Nasr, *Science and Civilization in Islam* (New York: New American Librart, 1970), p. 22.

⁶⁵ Hamid Fahmy Zarkasyi, "Pandangan Hidup Dan Tradisi Intelektual Islam," www.insists.net, n.d., p. 8.

⁶⁶ Fazlur Rahman is a prolific thinker and writer who was born in Haraza, Pakistan on September 21, 1919. After a long Islamic intellectual career, he remained at the University of Chicago as a Professor in the study of Islamic thought until his death on June 26, 1988. See: Fazlur Rahman, *ISLAM*, ed. Ahsin Mohammad (Bandung: Penerbit Pustaka, 2010), p. vi.

underlies a person in viewing science. The wrong perspective can affect the application and implementation of this knowledge.⁶⁷

Pervez Hoodboy, who achieved a doctorate in nuclear physics, also refused. In his view, efforts to create and develop a scientific discipline based on religion are futile. It is based on the failure of the activities of Muslim scholars who intend to build Islamic science, which is far from being in the realm of general knowledge, especially those that enter the dimension of science.⁶⁸ He also thinks that science is universal and crosses nations, religions, and civilizations.⁶⁹

The current condition of Muslims living in a modern Western environment and technology is undeniable. Before formulating a comprehensive concept of Islamic science properly, the top thing we can take is to minimize the impact of damage caused by the ambiguity of the Western scientific system. The trick is to use ethics as a balance sheet for selecting the principles of science and technology developed.⁷⁰

Second, the Islamization paradigm is characterized by an integral or monotheistic method of thinking. It means that in understanding the reality and truth, Islamization uses a non-dichotomous method that distinguishes objective and subjective, historical-normative, textual-contextual, etc. In Islam, the human soul is creative. With its perception, imagination and intelligence form and translate the world of senses and sensory experience and the world of imagination. As a result of such a dual worldview, the intellectual tradition in the West is colored by the emergence of various systems of thought based on materialism and idealism, which are supported by methodological approaches such as empiricism, rationalism, realism, nominalism, pragmatism, and others. As a result, in the West, the two poles of truth-seeking methods never meet.⁷¹

Third, Islamization Paradigm is sourced from the revelation, which is strengthened by religion and supported by the principles of reason and

⁶⁷ Adnin Armas, *Krisis Epistemologi Dan Islamisasi Ilmu* (Ponorogo: CIOS-UNIDA GONTOR, 2015), p. 19.

⁶⁸ Pervez Hoodboy, *Islam and Science: Religion Orthodoxy and the Battle for Rationality* (London: Zeed Book Ltd, 1991), pp. 76–78.

⁶⁹ Syahrial, "Islamisasi Sains Dan Penolakan Fazlur Rahman," *Lentera* 1, no. 1 (2017): p. 70.

⁷⁰ Handrianto, *Islamisasi Sains: Sebuah Upaya Mengislamkan Sains Barat Modern*, p. 204.

⁷¹ Zarkasyi, "Pandangan Hidup Dan Tradisi Intelektual Islam," p. 8.

intuition. Islam as a religion and a worldview has "mature"⁷² since it was revealed to Prophet Muhammad and did not require development. Islam only requires interpretation and elaboration that refers to the permanent source. Therefore, the characteristics of the Islamic worldview are authenticity and finality.⁷³

Fourth, in the Islamization Paradigm, there are primary elements, namely; the concept of God, the concept of revelation, the concept of nature, the concept of human psychology, the concept of science, the concept of religion, the concept of freedom, the concept of values and virtues, and the concept of happiness.⁷⁴ These fundamental conceptual elements determine the form of *change*, *development*, and *progress* in Islam. These basic elements act as unifying pillars that put the system of meaning, the standard of living, and values in a unified system that is coherent in the form of a worldview.⁷⁵ The concept of revelation here rests on the Qur'an as the holy book, which straightens the wrong path to one belief, straight and true.⁷⁶

Fifth, it has the main essential element, namely the concept of God. The concept of God (the central concept that characterizes other concepts) in Islam is central and is not similar to the concepts found in other religious traditions; as in the Greek philosophical tradition and Hellenism; the Western philosophical tradition, or the Eastern and Western mystical traditions at the same time.⁷⁷

Based on the explanation above, we can see that Islamization is a paradigm that covers, first, the physical and metaphysical aspects; second,

⁷² Thus, Islam has 'matured' since it was first revealed. Islam does not require a process of 'growth' to maturity or progress, the development and change of things are very clear. Islam has realized its own identity since the revelation. The religion of Revelation can only know itself from the beginning; and that self-knowledge comes from Revelation itself, not from history. See: Adnin, "Pandangan Alam Barat Dan Islam," *Islamia* 12 (2018): p. 15.

⁷³ Zarkasyi, "Pandangan Hidup Dan Tradisi Intelektual Islam," p. 9.

⁷⁴ The key concepts of Islam remain unchanged, in contrast to Western concepts which always change over time. It is because concepts of the West always experience a paradigm shift (*shifting paradigm*) and never reach the final stage, so they are always evaluated, developed, and changed, never consistent.

⁷⁵ Zarkasyi, "Pandangan Hidup Dan Tradisi Intelektual Islam," p. 9.

⁷⁶ Sulaiman Kudri, "Masyarakat Ideal Dalam Al-Qur'an (Pergulatan Pemikiran Ideologi Pemikiran Negara Dalam Islam Antara Formalistik Dan Substaansialistik)," *Khazanah: Jurnal Studi Islam Dan Humaniora* 14, no. 1 (2017): p. 45.

⁷⁷ Zarkasyi, "Pandangan Hidup Dan Tradisi Intelektual Islam," pp. 9–10.

monotheistic method characterization; third, source of revelation strengthened by the principles of reason and intuition; third, making God the essential element that is supported by other factors that form a unified worldview. Then the fundamental difference between the Thomas Kuhn paradigm and the Islamization paradigm is that the scientific paradigm in the Western intellectual tradition is constantly changing and what Kuhn calls a *shifting paradigm*. If we examine further, the Western scientific paradigm that is continuously changing is caused by at least five values that are firmly embedded in their worldview.⁷⁸ In contrast to the West, the scientific paradigm of Islamization is relatively constant and has not changed radically. Even if there is a paradigm shift, the change does not touch on the fundamental aspects.

E. Conclusion

Based on the discussion above, it can be concluded that the development of science cannot be separated from the scientific community that uses, develops, and manages a form of scientific approach in earnest with the reference of thinking and the same commitment (*intellectual commitment*), thus giving birth to a scientific paradigm. With the dimensions that cover it, Islamization seems to have great potential to break the domination of science, which Western scholarship influences it, which smells of materialistic-secularism.

In the Western intellectual tradition, paradigm shifts and changes are inevitable because they originate from a secular worldview. In Islam, paradigm shifts do not occur. There are only new interpretations of reality due to changing times. The worldview in the Islamic intellectual tradition originates from something permanent, namely revelation. Apart from a necessary paradigm shift, the secular Western worldview does not touch the realm of metaphysics. As a result, scientific studies in the West only focus on empirical objects. In contrast to Islam, reality and truth in Islamization refer

⁷⁸ The fundamental aspects that spark the Western worldview include: (1) A sense as the only source to guide human life; (2) a dualistic view of reality and truth; (3) Justifying the temporal aspect of *Being* that project a secular worldview; (4) Defending the doctrine of humanism; and (5) Imitation of drama and tragedy which are considered as universal realities in spiritual life, or transcendental, or human inner life. These five values encourage scientific studies in the West to be only focused on empirical and rational areas. Something that is outside of the two domains, is considered unworthy research or unscientific. It means that Western worldviews generally only touch the empirical or *visible* areas, not the *invisible* or metaphysical areas. See: Al-Attas, *Islam Dan Sekularisme*, p. 170.

to something *visible* (physical) and *not visible* (metaphysical). Therefore, scientific studies in the Islamic paradigm are comprehensive because they include empirical and non-empirical dimensions. [.]

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