ISLAMIZATION OF SCIENCE OR SCIENTIFICATION OF ISLAM? BRIDGING THE DICHOTOMY OF SCIENCE

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Abstract: There is a big controversy and debate over how to reconcile science and Islam without much results as two have quite different perspectives. The dispute is not only how science and religion should be positioned in relation to one another, but in adopting one of the two paradigms: One, Islamization of science, which questions whether religion is superior to science and that science must be subjected to religion or integrated in Islam; two, Scientification of Islam, the other paradigm which perceives that Islam needs to be integrated in science through a process of objectification in order to be valid. There are serious implications of both paradigms and there is a need to examine both perspectives to see whether there is room for compromise. This study examined the experiments being carried out by Muslim intellectuals at several campuses of Indonesia's State Islamic Religious University (PTKIN), including UIN Malang, UIN Bandung, UIN Yogyakarta, UIN Semarang, UIN Jakarta, and UIN Surabaya to rethink alternative solutions to the long debate between the two paradigms of Islamization of science and Scientification of Islam. The dialogical integration paradigm, one of the results of this study, offers an alternate strategy for bridging the gap between science and religion. It is expected that the ramifications of this study would lead to a rethinking of the conceptual relationship between science and religion as well as a shift in the formats being experimented to implement science and religion integration in educational institutions.

Keywords: Islamization of Science, Scientification of Islam, Dialogic Integration, Dichotomy of Sciences.

1. Introduction

In response to concerns about the conflict between science and religion,

Muslim intellectuals have engaged in a lengthy discussion about how to bridge the gap. In the words of Davis (1999), science is "a structure based on facts." According to a broader definition, science and religion can be divided into two paradigms: Islamization of science and Scientification of Islam. The two paradigms can be found on two opposite sides of the pendulum. When it comes to overcoming the conflicting contradiction between science and religion, the two paradigms have quite different perspectives. At the conceptual level, there is a heated dispute about how science and religion should be positioned in relation to one another, as well as which one should be elevated above the other. These paradigmatic divisions might help to understand the truth of such a dispute.

In accordance with the Islamization of science paradigm, religion is regarded as superior to science, and science must be subject to religion, as a result, science must be integrated in Islam. However, according to the other paradigm of scientific of Islam, the religion (Islam) is the one that needs to be integrated in science through a process of objectification in order to be valid. After considering the implications of these paradigm shifts, there is also a heated debate over experimenting at the experimental level as well. The former paradigm, the concept of Islamization of science was rejected by some Muslim thinkers highlighting some of its flaws. They scoffed at the idea of Islamization of science, arguing that Scientification of Islam was more realistic and did not contradict with the development of science around the world. It was also argued that science was inherently interdisciplinary and hence cannot be subsumed under a single theory or set of beliefs. Islamization, Christianization, or atheismization are all impossible for science. Islamizing science, moreover, implies reducing Islam to an ideology rather than a religion (Abremski & Roben, 2021).

As a response to this criticism, Scientification of Islam was offered as a counter-paradigm to Islamization of science. To strengthen this argument, the idea of Islamic science was proposed wherein statements in Islamic literature were sought to be proven by scientific evidence. To put it another way, the advocates of Scientification of Islam argued that essence of Islamic science is a scientific approach to God's revelation and, therefore, Islam should be introduced into the scientific community (Islam to sciences).

The current study examined how to resolve this long-running debate whether Islamization of science or scientification of Islam is better. This study was carried out at a number of Islamic universities in Indonesia which are pioneers in experimenting with the concepts of Islamization and scientification

during last few years. These experiments aim at developing alternative paradigms that are more harmonious, rational, and realistic, without considering one paradigm superior to the other, and through engaging in open and equal dialogue with one another. The rationale of this study was to get away from this discourse, and carry out a paradigmatic reformulation by reflecting on the experiments that Muslim intellectuals have undertaken.

2. Literature Review

Muslim intellectuals have interpreted the concept of Islamization of science with a diversity of approaches. Among the prominent ones include: Nasr (1970, 1978), I. Al-Attas and Naquib (1978), Al-Faruqi (1982), Sardar (1987), Idris (2014), Sulayman (1997), al'Alwani (1995), Manzoor (1990), Anees (2004), to mention only a few. Similarly, Scientification of Islam was advocated by a number of scholars with different world views, among whom Arkoun (2003), Rahman (1988), Mahdi (1994), Salam (1984), Soroush (1998, 2002), Tibi (2009), Kuntowijoyo (2004), and Abdullah (2012, 2014, 2017) are prominent.

- *Overview of the Islamization of Science Paradigm*

In order to generate knowledge that is based on God's revelation, Islamization of science is "a process of thought, ideology and normative-ideal patterns that are built on the basis of reason, soul and conscience"(Sulayman, 1997). Humans interpret God's creation into numerous areas of knowledge, according to the Islamization of science paradigm. Proponents of Islamization of Science state that all branches of Science must be Islamized in order for science to be in line with God's revelation. Thus, Islamization of science involves incorporating science into Islam. It is then necessary to Islamize modern science and build the basis for Islamic science in theory and practice, according to Nasr (1970). He argued that the Islamization of science aims to unearth God's traces on earth. "All Muslim scholars study science not only out of interest, but also to find God's footsteps in this world," he said (Nasr, 1978), quoting his earlier publications 'Science and civilization in Islam,'(Nasr, 1978) and 'Islamic science'(Nasr, 1970). To add, Nasr (1970) used the oneness of God as the premise of unity of nature in his theoretical plan.

One of the early proponents of Islamization of science, S. M. N. Al-Attas (1979)

states that all knowledge originates with God. Humans are God's *khalifah* on Earth and, therefore, they are given the opportunity to interpret God's scriptures, leading to the emergence of numerous fields of study. To achieve Islamization, according to Al-Attas, the fundamental aspects and conceptions of Western culture and civilization must be severed. He emphasized that the essence of knowledge is the revelation and transmission of God's wisdom to mankind, and this is what he recommends to create an epistemological foundation for Islamization of science(I. Al-Attas & Naquib, 1978; M. N. Al-Attas, 1980; Jambulingam, 2019).

Al-Faruqi (1982) believes that Islamization of science is the main way to reconcile science and Islam. It was his goal to reconstruct the entire human knowledge heritage from an Islamic perspective. Al-Faruqi defines the Islamization of science as "an effort to provide a new definition, organize data, rethink thinking methods and associate data, re-evaluate premises, re-project goals, and do all kinds of things so that the existing disciplines can benefit the future of Islam and its treasures" (p.32), directing Islamic thought to paths that lead to the fulfillment of God's design pattern. In terms of monotheism as the foundation for the growth of the Islamization of modern science, both Al-Faruqi (1982) and S. M. N. Al-Attas (1979) hold a similar point of view, the only difference lies in approach according to the methodology that will be utilized. Al-Faruqi's approach recommends that the path to Islamization must begin with mastering modern science in order to integrate it into Islamic creative synthesis and integration, whereas Al-Attas believes that this is only possible if the key elements of Western modern science have been isolated beforehand. The western sciences have also been a consideration in this debate(Hashim & Rossidy, 2000).

Sardar (1987) argues that Islam is both a belief system and a worldview. To rebuild Muslim civilization, this world view must be developed further. Therefore, Muslim academics should focus on the development of Islamic science, rather than attempting to Islamize Western science. In order to be more progressive, the Islamization of science must abandon Western scientific paradigms in favor of forging its own Islamic framework from the ground up. Sardar (1987) also highlights the significance of constructing an Islamic epistemology based on Islamic philosophy and reality in this setting. Using a unique strategy, technique, and epistemology, any civilization can create its own civilization, he adds. He used the example of the Greek, Chinese, Roman, Hindu, Aztec, and Myons sciences, each of which had its own unique qualities owing to the various word perspectives held by its practitioners. The path of Islamization proposed by Al-Faruqi (1982) differs from this one, in which Al-

Faruqi uses modern science as the first step before learning about Islamic science.

The opposing voices to Islamization of science includes that of Arkoun (2003), who warns that the goal of Muslim intellectuals to Islamize science is a mistake because it can trap Muslims in an approach that sees Islam solely as an ideological system. According to him, this approach places theological teaching and scientific postulates in diametric opposition to one another, which must be abandoned. Likewise, Rahman (1988) believes that Islamization of science is a fruitless endeavor because science cannot be Islamized, there is nothing wrong with science, and the only thing wrong with science is its misuse. Science possesses two characteristics, similar to a double-edged sword, and it must be handled wisely and responsibly. He emphasizes that a nuclear chemist should apply his or her nuclear chemistry knowledge to the production of electrical energy and radioisotopes for the benefit of humans, rather than to the production of nuclear weapons that kill people. Salam (1991), too, asserts that there is only one universal science, and that its issues and forms are universally applicable to all people. As a result, Islamic science, like Hindu science, Jewish science, and Christian science, does not exist, nor does any other science.

Soroush (1998) contends that Islamization is both illogical and unattainable because reality at the root of science, is neither Islamic nor unIslamic. One cannot declare something to be Islamic or not based on its content. Science is a logical conclusion based on the facts of the matter. Religion and science are vastly different. Science is open, public, and communal, whereas religion is private, personal, and ever-changing, both however can be linked, according to Soroush (2002). For example, he suggested that the meaning of Qur'anic verses can be deepened and rationalized via the lens of scientific inquiry. Tibi (2009) also highlights how Muslims have reacted to Western science's claim that it is universal by embracing Islam as a scientific method. A reaffirmation of Islamic science's locality in the face of global science is all that the Islamization of science entails. This is why Islamization is simply the indigenization of Islamic culture, according to him. Tibi, therefore, concludes that those who oppose Islam and science because of their lack of knowledge are ignorant(2009).

The debate is endless. Idris (2014) at this stage argues that instead of such a dialogue to test the superiority of the two paradigms, Muslim intellectuals should bring Islamic perspectives into their academic domains and conduct their research in the context of Islam's societal evolution. He emphasizes that before an effective Islamization program could be executed, it is necessary to resolve

some fundamental philosophical and methodological issues. To help guide him in the process of Islamization of science, Idris (2014) poses several questions, including: (1) what is the meaning of Islamization of science? (2) is science possible? (3) is all science learned or is some of it innate? (4) what are the sources of science? and (5) what is the scientific method? The responses to these questions can be more systematic if they are based on these questions. Modern science, in his opinion, is "science within the framework of the materialist atheist ideology that predominates in the West," which makes it feasible for Muslims to Islamize the subject matter of science. Therefore, he advocates for Islamization of science through two approaches: first, by providing science with a firm Islamic foundation, second, by upholding Islamic principles in the pursuit of knowledge.

Anees (2004) claims that those who dispute on science and religion, without first undertaking a fundamental study into the epistemological structure of Islam, are naive. The intellectual reorientation of Muslims, he argues, should begin with a new and critical interpretation of traditional Islamic epistemology, followed by the formulation of contemporary science concepts in a creative manner.

To conclude, those who advocate for the Islamization of science can be said to share a common epistemological perspective in that they consider God's revelation to be the source of all areas of knowledge. Islam is a worldview that can be used to construct another worldview. Monotheism is at the heart of Islam's philosophy. When attempting to develop civilization, including science, Tauhd must be utilized as a starting point as well as a value bound by which to measure success. The distinctions amongst Islamization proponents are mostly based on the importance placed on various characteristics of subjects and objects, which has implications for the approach employed. Scholars like S. M. N. Al-Attas (1979), for example, place emphasis on the subjects of Islamization, which are humans; Al-Faruqi (1982) places emphasis on the object of Islamization, which is information. As a result, when compared together, while Al-Attas presents his methodology by purifying Muslim perspectives of concepts from Western science, but Al-Faruqi follows the opposite approach and emphasizes the mastery of Western science as a prerequisite for its integration with Islam (Hashim & Rossidy, 2000).

- *Counter Paradigm: Scientification of Islam*

This scientification of Islam is based on the departure from text to context (Kuntowijoyo, 2004). The scientification of Islam is exemplary through integration of

human scientific wealth (empirical findings) and revelation (the Qur'anic guidelines and the Prophet's sunnah), which is a kind of objectification or movement from text to context, and understanding and interpreting the verses of the holy book (text) in the perspective of sciences. Scientification of Islam is also a process to elaborate normative-subjective concepts into open and inclusive empirical-objective formulations. In other words, Scientification of Islam does not perform any normative judgment, rather it utilizes knowledge from other realms to understand the normative contents of Islam (Priyono, 2021).

Kuntowijoyo (2004) finds Scientification of Islam as a more proactive paradigm, rather than a reactive and apologetic one. He argues that Scientification of Islam is more appropriate. First, Scientification of Islam brings doctrines (al-Qur'an and al-Hadith) into contact with reality, so scientific components shift from text to context. Second, there is a need to find an answer to the question why Muslims should experience reality through the lens of Islam. The answers to this question are: (a) like other sciences that see reality indirectly, Scientification of Islam can also assume reality through Islam, because there are many normative assumptions in Islam that can be derived into science through the process of objectification; and (b) science is obtained through the organized and systematic construction of empirical experience, so religious norms as empirical experience can also be constructed into science. Third, when compiling science, empirical experience aspects that are in contact with the mind, soul, and nature must be included. The lack of empirical experience in the preparation will result in science that is disconnected from human values.

Meanwhile, Abdullah (2012, 2014) takes this religion-science dichotomy on a pedagogical level to examine the rapprochement process. the rapprochement process can be referred to as "a scientific epistemological unification or reintegration movement" (Abdullah, 2012, 2014). Under this pedagogical process, it is possible to initiate a new vision of scientific epistemological reintegration program: the anthropocentric-integral scientific webbed model, a new approach to natural sciences, social sciences and humanities. Each step complies with the objective and firm religious ethics and moral bases of Qur'an and Hadith. Abdullah (2017) thus proposes global knowledge objectification in the context of Scientification of Islam, and establish a people's culture, for which it is not necessary to separate knowledge from religion. He cites examples such as optics and mathematics not being Islamic sciences, mechanics and astrophysics not being Judeo-Christian sciences, acupuncture not being animism-dynamism

science, yoga not being Hindu science, etc. So, Scientification of Islam must be science created from revelation for all mankind, not just Islam. In general, Scientification of Islam promotes an anthropocentric global Islamic worldview. They believe science is already Islamic because it is derived from God and then translated by people into various forms of knowledge.

With reference to this debate, one thing is obvious that Islam and science are interrelated and contribute to each other. Hence, the any pursuit of scientific advancements should be done within religious (Islamic) framework and which is built on Islamic beliefs, ethical and moral system, and the sharia principles. Science transcends nations, faiths, and civilizations. Science is a global civilization that mankind must employ for humanity's benefit. This is the fundamental difference between it and the proponents of Islamization's understanding of the word view, which is theocentric and based on the world view of Muslims.

3. Methodology

A combination of philosophical and phenomenological approaches was applied in this qualitative study. These approaches, according to Miles, Huberman, and Saldana (2014), adequately capture the essence of a naturally occurring occurrence or scenario. Field data on experiments with Islamization, science, and integration were easily revealed using the phenomenological approach whereas the strategies based on religious and philosophical principles were analyzed through a philosophical approach. Criticizing oneself and one's ideas is an essential part of philosophical reasoning, according to Connolly (2009). Islamization and scientification, therefore, could be easily examined from the philosophical perspective. However, individual and collective actors of Islamization, scientification, and dialogical integration were examined using the phenomenological approach. In everyday life, a wide variety of items, events, instruments, time travel, the self, and other people all play important roles, and the phenomenological method helps us make sense of those experiences (Stanford of Encyclopedia Philosophy, 2013).

Data analysis was carried out descriptively by using field data as the main source and literature review as a supporting source. Field studies were used to explore data in the field which was the locus of research. The literature review is used to examine the views of the proponents of Islamization and scientification to draw conclusions in an overview. The struggle of experimentation with Islamization vis a vis science and the alternative solutions offered were the case studies brought to the level of

conceptualization. In other words, the theories in the literature were used as an analytical framework for field data, and conclusions were then drawn.

Field data in this research were taken from several State Islamic Universities (UIN) in Indonesia, namely UIN Malang, UIN Bandung, UIN Yogyakarta, UIN Semarang, UIN Jakarta, and UIN Surabaya. The selection of these UINs was based on two criteria. First, because these UINs have scientific paradigms that were built through serious discussions involving authoritative intellectual actors, so that the paradigm distinctions would be clear. Second, these UINs elaborate their scientific paradigms into academic texts, both at the philosophical, institutional, and curriculum levels, which would help in interpreting the science-religion dichotomy.

4. Results and Findings

- *Discourse on Islamization vis a vis Science at the Level of Experimentation in Indonesia*

Islamization vs. science is a recurrent topic of discussion among Muslim intellectuals, whose outcomes will decide the future course of this discourse (Haneef, 2015). Experiments, both Islamized and scientific, are being conducted in the Indonesian Islamic universities. UIN Malang and UIN Bandung are conducting experimentation on early Islamization of science while UIN Yogyakarta and UIN Semarang are leaders in the practice of Scientification of Islam.

To test the Islamization of science, UIN Malang relied on three main postulates: axiological, epistemological, and ontological with (a) the concept of lul albab as an axiological foundation; (b) the universality of Islamic teachings as expressed in the Qur'an and Hadith; and (c) a tree of knowledge for the construction of an Islamization of science as an ontological foundation. The university believes that natural, social, and humanistic knowledge are elaborations of God's *qauliyyah* and *kauniyyah* verses as a result of these three postulates coming together. With such experimentation at UIN Malang, the application of Islamization of science has sparked a debate of how the Qur'an and Hadith can be integrated into the fields of scientific, social, and humanities sciences. Responding to a debate and an interview during this study, the informants suggested three ways. First, making use of all domains of science with deductive reasoning from the Qur'an and the Hadith. Prof. cashier was the first to propose this idea. Second, Prof. Muhaimin, another informant, suggested the alternative viewpoint of cultivating a thorough

understanding of the teachings of the Qur'an and Hadith in these domains. The third option was advanced by the informant Prof. Imam Suprayogo, who suggested to designate each form of knowledge's content with passages from the Qur'an and Islamic tradition, which would prove most practical step in the current situation. Figure 1sums up these deliberations.

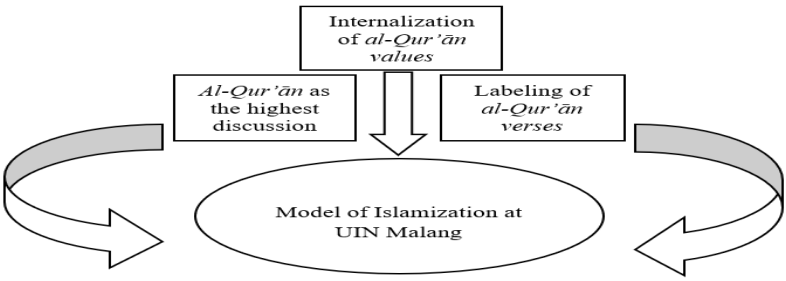

Figure 1: Model of Science Islamization at UIN Malang

UIN Malang implements the notion of Islamization of science through the establishment of three major programs: the construction of the tree of knowledge curriculum, the reinforcement of the lul albb academic culture, and the development of the ma'had program or campus boarding school. The tree of science curriculum development program is the first stage in translating the goal of Islamization of science into the division of courses into three scientific clusters: tool science, basic science, and development science. Tool science is required before learning fundamental science, which is then utilized to study development science. Figure 2 depicts the UIN Malang scientific curriculum tree.

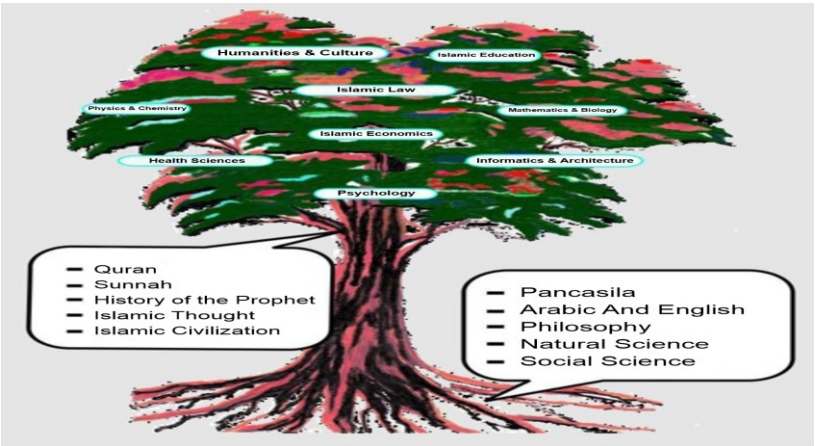

Figure 2: Metaphor of scientific curriculum tree at UIN Malang
(Sources**:** https://www.uin-malang.ac.id)

The UIN Malang courses are characterized in the tree of knowledge and divided into three clusters: First, the Pancasila, Arabic and English, Philosophy, Basic Natural Sciences, and Basic Social Sciences are described as roots. Second, basic science courses, which include the Qur'an, Hadith, History of the Prophet, Islamic Thought, and Islamic Civilization are shown metaphorically as the main trunk of the curriculum tree. Third, the Humanities and Culture, Islamic education, Islamic Economics, Physics, Chemistry, Mathematics and Biology, Health Sciences, Informatics and Architecture are clusters of development science courses described as branches and twigs (Suprayogo, 2012).

The academic culture of lul albb is being strengthened in order to promote the fulfillment of UIN Malang's aspirations of becoming the "Center of Excellence and Islamic Civilization." The Qur'an, 3: 191 is the source of lul albb's scholarly culture. To make it easier to execute, the concept of lul albb academic culture is expanded into a "vision, mission, and tradition of UIN Malang" that includes guidance on how to think and behave with the academic community. According to UIN Malang, the ideal Muslim lul albb is someone with spiritual depth, moral greatness, breadth of knowledge, and professional maturity (https://www.uin-malang.ac.id).

Pesantren is an essential indicator of the Islamization of science at the University of Indonesia Malang (UINM). The university and pesantren (https://www.uin-malang.aac.id) are combined in campus boarding schools. While Western science is often expressed in English, Islamic subjects are written in Arabic. The primary goal of this program was to create a learning environment in which students can learn Arabic and English as the main strength for the Islamization of science (Suprayogo, 2017).

Similarly, using an integrative and holistic scientific worldview marked by revelation, UIN Bandung develops the concept of Islamization of science as its goal, with its mission to become an ASEAN leader in Islamic higher education by 2025, built on the foundation of revelation and guided by high ethical standards. At UIN Bandung, Nanat Fatah Nasir was one of the driving forces behind the concept of Islamization of science. Natsir (2006) claims that Islam gave rise to classical civilization, which was made possible only through the Ulema's holistic and combined interpretation of the Qur'an and the Kauniyyah. To put it another way, there is no such thing as a difference between religion-based science and other kinds of research.

The University of Indonesia, Bandung invented the wheel metaphor (Figure 3) to represent the scientific pattern. The wheel helped to demonstrate the point

of contact between science and religion, as well as to provide an option for efforts to promote integration between the two (Natsir, 2006). The wheel, which turns on its axis and travels through the plains of the earth, is a metaphor of the dynamism of the scientific world. Essentially, the wheel is a force that sustains the load of a vehicle that is constantly moving. In this case, the role of the wheel is a description of the function of UIN Bandung as a campus that integrates general science and religion in order to generate institutional responsibilities in the development of an integrative and comprehensive scientific tradition in Indonesia. It is possible that the scientific wheel of UIN Bandung would be able to simultaneously inspire creativity in order to elevate the holy book Qur'an to the status a source of information that is dynamically relevant to the area of life. As a result, revelation is seen as the primary source for generating contemporary Islamic scientific innovations, which are characterized by a critical and selective attitude toward contemporary science that is currently developing (Natsir, 2006). Figure 3 is the wheel which guides the Islamization of science concept at UIN Bandung.

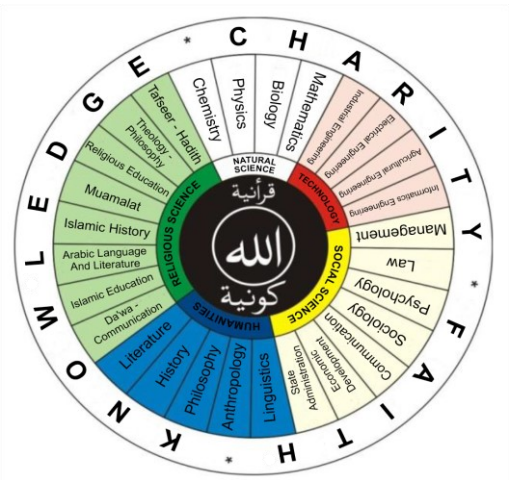

Figure 3: The Metaphor of the Wheel of Revelation Guides Science UIN Bandung
(Source: WMI Scientific Consortium Team (2018))

To elaborate on the concept of Islamization of science, UIN Bandung has formed the WMI Scientific Consortium, with the main agenda of compiling the WMI trilogy book, consisting of: WMI Scientific Consortium Masterplan, KP-WMI Book, and WMI Pocket Book. In this book, WMI's scientific epistemological engineering has been developed to produce new fields of science and their specifications. WMI's scientific

epistemological engineering process can be seen in Table 1.

Table 1: Scientific Epistemology Engineering WMI UIN Bandung

Scientific Epistemology Engineering by WMI	New Field of Science	Specification
	Islamic law	Islamic institution law
		Islamic crime law
		Islamic family law
	Islamic social & politics	Islamic society studies
		Islamic socio-economy
		Islamic communication
		Islamic politics
	Islamic philosophy	Science of Tauhidiyah
	Islamic psychology	Sufism of Psychotherapy
		Islamic education psychology
		Islamic clinical psychology
	Islamic education science	Islamic math education
		Islamic education management
		Islamic education curriculum
		Islamic education sociology
	Syariah/Islamic economy	Islamic management
		Islamic administration
	Islamic sciences	Alchemy/Islamic chemistry
		Theo-Technology
		Life Sciences/ Islamic Biology
	Islamic culture	Islamic linguistics
		Arabic/Islamic literacy

(Source: WMI Scientific Consortium Team (2018))

UIN Yogyakarta applies Islamic science with the paradigm of interconnection of triadic branches of science, namely: aḍarah al-naṣ (text culture), aḍarah al-'ilm (culture of science) and aḍarah al-falsafah (culture of philosophy). The elaboration of this paradigm manifests itself in the cobwebs of

science at UIN Yogyakarta, as seen in Figure 4.

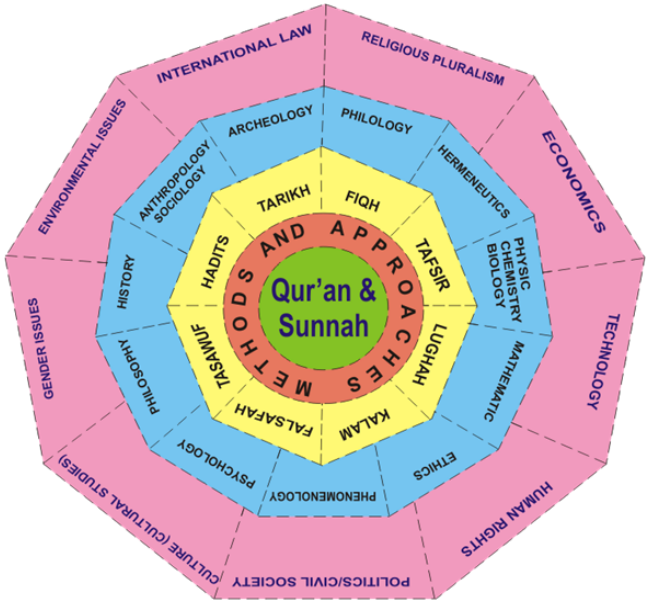

Figure 4: Cobwebs of science UIN Yogyakarta
(Source: Abdullah (2012))

In the spider web of science scheme, UIN Yogyakarta places Qur'ān and Hadīth, as the starting point for religious knowledge, including components like Tarikh, Fiqh, Tafsir, Lughah, Falsafah, Kalam, Sufism, and Hadīth, after going through circle 2 (methods) and approaches). At this stage, the science of the Qur'ān and Hadīth is carried out with modern methods and approaches so that the Islamic scientific horizon can penetrate the outer circle (religious pluralism, economics, human rights, cultural, civil society, gender issues, environmental issues, and international law) (Abdullah, 2012). Abdullah as the originator of the spider web of science asserts that the paradigm of interconnection of science (takāmul al-ʿulūm; iztiwāj al-maʿārif) is very basic for conducting contemporary religious studies. If this paradigm is ignored, the impact and consequences will be complex both in terms of social, cultural, and political order on a local, regional, national, and global scale (Abdullah, 2014).

The Islamic scientific experimentation at UIN Yogyakarta emphasizes the integration of the wealth of human scholarship with revelation through the objectification of texts. According to Abdullah (2017) the characteristics of UIN Yogyakarta's scientific knowledge lie in the depth of the pillars of interconnection with one another.

The implementation of the scientific paradigm at the practical level is realized through curriculum building and learning concepts developed. The curriculum building of UIN Yogyakarta is characterized by interconnection between various types of knowledge with the main orientation of objectifying the verses of the Qur'an. For example, the curriculum of the Chemistry Study Program at the Faculty of Science and Technology integrates Chemistry and Islam. In this course, the competencies provided to students are how to study scientific themes in the Qur'an for research using chemical theories to strengthen the postulates of the Qur'an. The learning concept developed in this course is by applying chemical research to prove the postulates of the Qur'an selected from chemical verses that have been thematically studied previously.

Table 2 illustrates a specimen of curriculum and learning description in the Chemistry Study Program-Faculty of Science and Technology.

Table 2: Description of Chemistry Study Program Curriculum and Learning

No	Aspect	Description
1.	Course	Students are able to analyze a product based on Islamic law as reflected in the following courses: 1. Integration of Islam, Science and Technology, and 2. Integration of Chemistry and Islam. In these courses students are required to have knowledge of both chemistry and fiqh so that they are able to conduct studies of chemistry and Islamic values inter-connectively.
2.	Instructional Process	In the lecture process, examples of Qur'ān and Hadīth verses related to chemistry lecture material are given for research.

(Source: Academic Teamwork UIN Yogyakarta)

UIN Semarang carries the concept of Unity of Sciences (UoS) in implementing the idea of integrating science. The UoS concept of UIN Semarang emphasizes the paradigm of Islamic science, where the main marker of UoS is the humanization of Islamic sciences. This humanization of Islamic sciences campaign was started by Syarifuddin and Azizy (2017), who placed Islamic sciences as values or ethical sources for the development of natural, social, and human sciences. They offered two aspects of reciprocal implications between the Islamic sciences and the social sciences and humanities. First, social sciences and humanities are studied as supplements to deepen Islamic sciences and to understand Islamic teaching texts. Second, social sciences and humanities are

sciences resulting from the development of Islamic sciences. In this context an interdisciplinary, multidisciplinary and even trans-interdisciplinary approach can be used while still referring to the main mission of Islam which is to give mercy to humans throughout the ages (Syarifuddin & Azizy, 2017).

The elaboration of the initial idea of the proponents of humanization of Islamic sciences which later became the mainstream of UoF was sharpened in three development strategies, namely humanization of Islamic sciences, spiritualization of modern sciences, and revitalization of local wisdom. Humanization of Islamic sciences is an effort to integrate the universal values of Islam with modern science in order to improve the quality of human life and elevate civilization. Spiritualization is an effort to provide a foothold of divine values and ethics to Western sciences so that they can benefit humanity. The revitalization of local wisdom strategy is an effort to maintain the heritage of the nation's noble values (Adinugraha, Hidayanti, & Riyadi, 2018).

At the operational level, the humanization of Islamic sciences is carried out by combining Islamic sciences with modern science. The way to do this is to inject Islamic values into secular science. At the institutional level, the operationalization of the concept of humanization of Islamic sciences is carried out by combining the names of faculties, for example: Faculty of Usuluddin and Humanities, Faculty of Tarbiyah and Teacher Training, Faculty of Da'wah and Communication, Faculty of Sharia and Law, and others.

UIN Semarang composes a diamond metaphor to describe its UoS concept, as shown in Figure 5.

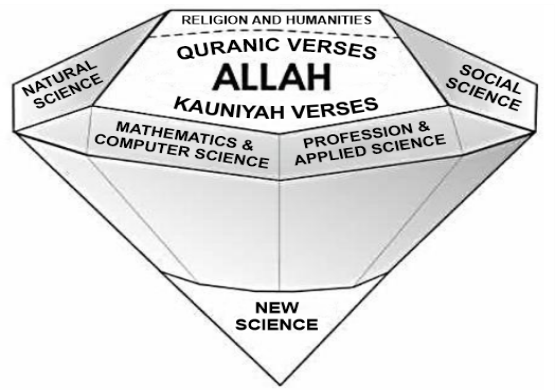

Figure 5. Science Diamond UIN Semarang
(Source**:** Sholihan (2015))

In the scheme as shown in Figure 5, it appears that all knowledge comes from Allah in the form of verses of the Qur'an and *Kauniyyah.* These sources emit

religious sciences and humanities, natural sciences, social sciences, mathematics and computer science, as well as professions and applied sciences, which in turn will give birth to new sciences.

- *Dialogical Integration as an Alternative*

In the midst of the academic discourse and experimentation as discussed in the previous section, it is necessary to find a middle way, namely a dialogical integration paradigm. The dialogical integration paradigm is an effort to integrate the treasures of human science with God's revelation in an equal and dialogical manner. Science and Islam are placed as two parallel entities to produce branches of science. So the essence of dialogical integration is to place science and Islam on an equal and dialogical basis (Islam vis-à-vis sciences in equal and dialogue).

In the dialogical integration paradigm, a two-way dialogue between the text (Islam) and the context (science) and vice versa takes place. The context along with the text becomes the main marker of equality and the critical nature of each factor. There is an open and critical back and forth dialogue between the text and the context as well as the context with the text without one being subordinated to the other. This distinguishes the dialogical integration paradigm from the two extreme paradigms, where Islamization opens a space for relations only context to text, on the other hand, science is only text to context. The difference between the three paradigms can be visualized in the Figure 6.

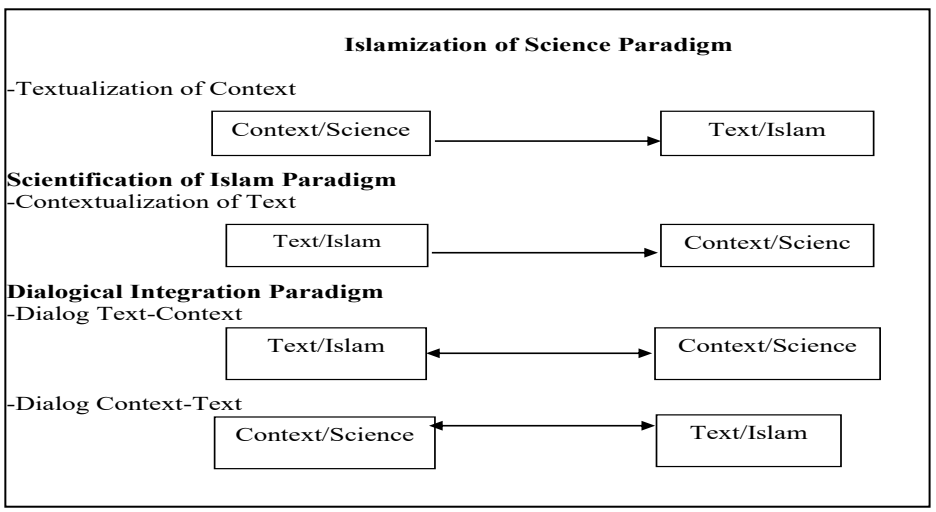

Figure 6: Islamization of Science, Scientification of Islam, and Dialogical

Integration Paradigm

In addition, experiments with the dialogical integration paradigm are being carried out by UIN Jakarta and UIN Surabaya. UIN Jakarta develops a dialogical integration paradigm in bridging the dichotomy of science and religion. UIN Jakarta adheres to the concept of reintegration of sciences based on the dialogical integration paradigm (Azra, 2013). The strength of the dialogical integration developed by UIN Jakarta lies in a rational perspective on the position of science and religion, which is open to each other, respecting each other's existence, but still being critical of the two.

The concept of dialogic integration at UIN Jakarta is being developed by conducting Islamic studies, social studies, politics, economics, modern science and technology, and medicine within the framework of dialogical integration. Islamic sciences and science are placed in open and critical dialogue with each other. In Islamic studies, there is no need for scientification, on the contrary, in scientific studies, there is no need for Islamization. These characteristics can be seen in the articulation of the academic tradition of knowledge, piety, and integrity (http://www.uinjkt.ac.id). The implicit meaning of this articulation is to conduct scientific and Islamic studies with knowledge through research, and to place piety and integrity as the basis of its moral-ethics.

The concept of dialogic integration of UIN Jakarta can also be seen from the meaning of the vision visualized in the university logo (Figure 7). UIN Jakarta's vision is explicitly "towards a world-class university with the integration of science, Islamic values, and Indonesianness" (http://www.uinjkt.ac.id). In its logo, dialogical integration is depicted through the image of a shadow globe covered in electron orbits forming a lotus flower (ṣidrah).

Figure 7: Dialogic Integration Visualization UIN Jakarta
Source: http://www.uinjkt.ac.id

The meaning of this logo is that UIN Jakarta has a vision to make science based on sunnatullah including Islamic sciences and science depicted as the shadow of a globe framed by the orbit of electrons. The Islamic sciences and sciences are oriented to achieve the knowledge of the highest truth which is described in the form of a lotus flower (sidrah) (http://www.uinjkt.ac.id.)

The dialogical integration model of UIN Jakarta is developed at three levels: (a) the philosophy level, (b) the curriculum level; and (c) the level of the academic program (Azra, 2013). At the philosophical level, a dialogical atmosphere is created between various Islamic and scientific disciplines by providing a strong ontology, epistemology, and axiology foundation (Kusmana, el-Mahsyar, Maman, & Hamid, 2006). For this matter, UIN Jakarta has conducted a series of long studies, the results of which are contained in an academic text in the form of a Proposal for Conversion of IAIN to UIN Jakarta, of 2001 and a Master Plan for Development (RIP) of UIN Syarif Hidayatullah Jakarta, of 2001.

At the curriculum level, a study program curriculum is developed that describes the recognition of knowledge that is not cognate on an equal basis, reflected by the inclusion of science study programs in the faculty of religion or vice versa. Operationalization of this can be seen in three patterns, first adding general courses to religious study programs and vice versa. For example, the Faculty of Medicine and Health Sciences includes Islamic subjects such as Islamic Studies I, Islamic Studies II, Arabic I, Arabic II, Muslim Doctors I, Muslim Doctors II, and Muslim Doctors III. As another example, the Faculty of Science and Technology includes Islamic subjects, such as Islamic Studies I, Islamic Studies II, Arabic Language, and Islamic Personality Development. Second, dialogue on several Islamic, social, natural, and humanities themes in certain subjects. For example, Islamic, Science, and Science courses, dialogue Islamic science in the form of the history of Islamic civilization, with the sciences and contemporary scientific treasures. Likewise, the Contemporary Issues and Islamic Finance Courses discuss Islamic disciplines, economics, and banking science. Third, conduct a study of the integration of knowledge related to Islam and science in a course (Kusmana et al., 2006).

At the academic program level, the strengthening of research traditions based on dialogical integration, learning innovations based on dialogic integration, and capacity building of lecturers with a dialogical integration mindset are carried out (Kusmana et al., 2006).

On the other hand, UIN Surabaya has developed the concept of dialogical

integration by confirming its milestone in the form of integrated twin towers (ITT). According to one of the initiators, Syam (2021) general knowledge and religion must be positioned proportionally where individuals greet each other, and are interconnected like twin towers. Thus, general science and religion are not blended into one, but are left in their respective positions, not intervening with each other, but in dialogue with each other.

ITT is placed within the framework of multidisciplinary scientific development where religious sciences, natural sciences, and social sciences and humanities can develop adequately without anyone being positioned as superior or inferior. In the ITT metaphor, religious knowledge is like a tower, while general science is another tower. The two towers are at their peak connected with multidisciplinary scholarship (Syaifuddin, 2013).

The IIT scientific scheme places the Qur'an and Hadith as the basis for building multidisciplinary scholarship. As displayed in Figure 8, one tower contains pure and applied religious knowledge clusters (Tafsir, Hadith, Kalam, Fiqh, Sufism, Tarbiyah, Da'wah), in the other tower there are general science clusters, namely natural, social, and humanities sciences (Physics, Chemistry, Anthropology, Sociology, Politics, History, Psychology, and Philosophy). The two scientific groups have dialogue with each other with a multi-interdisciplinary scientific bridge, namely Sociology of Religion, Philosophy of Religion, Anthropology of Religion, Islamic Politics, and Islamic Economics.

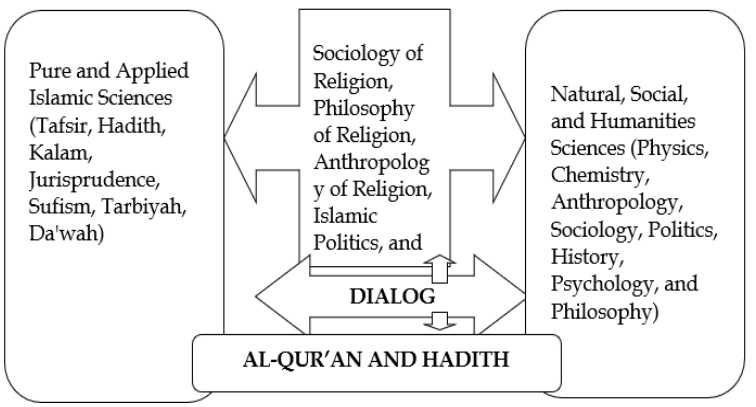

Figure 8. Scheme of Science of IIT UIN Surabaya
(Source: Syaifuddin (2013))

The choice of a dialogical integration model, such as the experimentation at UIN Jakarta and UIN Surabaya, can be an alternative middle ground between the

two extremes of Islamization and science. Dialogic options can cover the shortcomings of each pole. As is well known, Islamization has a weakness, namely denying the reality of the progress of Western science and technology, while scientification only relies on rational and value-free methods.

The choice of this dialogical integration model at the same time confirms that the dialogue pattern in Barbour's theory of the relation of science and religion is more realistic to bridge the dichotomy of science and Islam. According to Barbour (2000) there are four patterns of relations between science and religion, namely: conflict, independence, dialogue and integration. This experiment also confirms the paradigmatic model that continues to evolve in Kuhn's theory of the paradigm crisis. Kuhn (1970) states that the paradigm crisis framework is a tool for the scientific revolution.

Further discussion about what the product is and what the future holds for Islamization, scientification, and dialogical integration requires research after this project is underway for the next few years. The architects themselves claim that to see the results of his experiments took more than half a century. It is also still determined by the consistency variable in its implementation (Abdullah, 2017; Suprayogo, 2017).

5. Conclusion

This study brought to light the experimentation of the two paradigms, Islamization of science and Scientification of Islam and their moderation in the Indonesian context being carried out in several UINs in Indonesia. The UIN Malang and UIN Bandung are prototypes of Islamic religious universities that adopt the paradigm of Islamization of science (Hoodbhoy, 1991). This can be seen clearly in the building of scientific epistemology which is elaborated in the curriculum, institutions, and academic traditions. The UIN Malang uses the paradigm of Islamic universality with the Tree of Science metaphor, while the UIN Bandung uses the Wahyu Menandu Ilmu (WMI) paradigm with the Wheel of Science metaphor. Meanwhile, the UIN Yogyakarta and the UIN Semarang represent prototypes that adhere to the Islamic scientific paradigm. The UIN Yogyakarta emphasizes its paradigm in the form of the depth of the pillars of interconnection between natural civilizations, scientific civilizations, and philosophical civilizations with the metaphor of the spider web of science. The UIN Semarang has the paradigm distinction of Unity of Sciences (UoS) with an

emphasis on humanization of Islamic sciences through the Diamond of Science metaphor.

The moderation of two paradigms can also be seen at the UIN Jakarta and the UIN Surabaya. The UIN Jakarta has developed a paradigm of dialogical integration. The implementation of this dialogic integration at the UIN Jakarta is manifested at three levels, namely philosophical, curriculum, and academic programs. Meanwhile, the UIN Surabaya has developed a paradigm of equality and mutual respect between general science and religion with the metaphor of two connected buildings or ITT. The development of a dialogical integration paradigm as an alternative to the middle way of Islamization and scientification can be stated as a solution to the contradictions of dialogue between the proponents of Islamization on the one hand and scientification on the other. The development of a dialogical integration paradigm can be an alternative to a new paradigm for the relation between science and religion which is more moderate, realistic, and universal.

To conclude, this study is an evidence of the diametrical separation between science and relframework,the modern Muslim tradition as revealed in two main projects to address at the Indonesian universities. The first is the Islamization of science project, the second is Scientification of Islam. The two have opposite paradigmatic features. The Islamization of science has a core paradigm of incorporating science into Islam. Meanwhile, scientification incorporates Islam into science through a process of objectification. The moderation between the two needs to be mainstreamed again as being attempted in all universities sampled in this study.

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