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RECONSTRUCTION OF THE ISLAMIC SCIENCE PARADIGM: COMPARATIVE STUDY OF KUNTOWIJOYO AND ZIAUDDIN SARDAR'S PERSPECTIVES

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Abstract. Amidst the rapid pace of global modernization, reconciling modern science with Islamic values has emerged as a pivotal theme. The reconstruction of the paradigm of Islamic science represents a significant intellectual endeavor aimed at addressing this crucial issue. It offers profound insights into the inseparability of science and religion, demonstrating their potential to mutually enhance the pursuit of universal truth. The research method used is library research, conducting a comparative study of two prominent thinkers, Kuntowijoyo and Ziauddin Sardar, who hold unique perspectives on the role of science within the Islamic context. Kuntowijoyo, deeply rooted in Indonesian traditions, provides a distinctive viewpoint in linking science with Islam, as articulated in his work "Islam as a Science, Epistemology, Methodology and Ethics." Conversely, Ziauddin Sardar offers an intricate narrative that traces the intricate interplay between modern science and Islamic scholarly traditions. By juxtaposing these two perspectives, this research aims to unravel their views on the reconstruction of the paradigm of Islamic science. The research highlights their perspectives on the reconstruction of the Islamic science paradigm, discusses the convergence of key elements of Islam and science, and reveals the intersection of Indonesia's intellectual tradition and global perspectives in shaping this paradigm. This study provides insights into the critical contributions of Kuntowijoyo and Ziauddin Sardar in advancing the discourse of Islam in the context of contemporary science.

Keywords: *Science; Islamic Science; Paradigm Reconstruction; Kuntowijoyo; Ziauddin Sardar*

A. INTRODUCTION

Science and religion in modern scholarship have long been regarded as two independent domains of thought, but they share a common primary purpose. That is, seeking the truth and understanding the meaning of human existence. Because of its hanif nature, Islam has a universal nature. In addition, the religion focuses on the future by applying an absolute system of thought and action to face the challenges to come (Sardar, 1987a, p. 23). Amid the rapid pace of global modernization, the challenge of harmonizing modern science with Islamic religious values has become a central theme in intellectual discourse.

The reconstruction of the paradigm of Islamic science is an ambitious and important intellectual effort to address this crucial problem. It can provide a deep understanding of how science and religion as a whole cannot be separated and will be able to complement, even enrich each other, in the search for universal truth (Hassan & Quraishi, 2022, p. 77).

When discussing the reconstruction of the paradigm of Islamic science, two great names emerge in the panorama of contemporary thought. Namely, Kuntowijoyo, an accomplished scholar from Indonesia, and Ziauddin Sardar, a prominent thinker with a British-Pakistani background (Malik, 2022, p. 196). Both intellectuals had unique views on the role of science in the Islamic context that they affirmed through their works.

Kuntowijoyo, with his familiarity with local Indonesian traditions and values, brings a distinctive perspective in linking science with Islam. His thoughts are contained in his book entitled "Islam as a Science, Epistemology, Methodology and Ethics". Meanwhile, Ziauddin Sardar offers a view that traces the complex interplay between modern science and Islamic scholarly traditions, linking the two in an innovative narrative (Hassan & Quraishi, 2022, p. 74).

Through this comparative study, this paper aims to dissect and understand the views of Kuntowijoyo and Ziauddin Sardar regarding the reconstruction of the paradigm of Islamic science. By looking at the perspectives of the two in parallel, we can gain deep insight into how they bring together key elements of Islam and science.

This research will review each intellectual's views regarding local-global contexts, interdisciplinarity, critiques of traditional understandings, and approaches to the balance between spirituality and science. By considering these two perspectives simultaneously, we can feel how Indonesia's intellectual tradition and global outlook converge in forming a paradigm reconstruction of Islamic science.

This research will explore the differences in their views regarding the convergence of key elements of Islam and science, and consider the unique contribution of the Indonesian perspective and the global view in shaping this paradigm. By comparing their thoughts, this research aims to open new insights and provide a valuable contribution to the discourse of Islamic science in the contemporary context. Some previous studies may have explored these elements separately. There are also many studies that compare the thoughts of these two figures but juxtapose them with others such as Ismail Raji Al-Faruqi, M. Amin Abdullah, Fazlur Rahman and others. But as far as we have searched, the author has not found research that compares the thoughts of the two. This research makes a new contribution by connecting and comparing the views of these two key thinkers holistically.

Through a deep understanding of the views of Kuntowijoyo and Ziauddin Sardar, we will be able to see how both made important contributions in bringing Islam into contemporary scientific discourse and how their critical thinking forms the foundation for continuous renewal in Islamic scientific discourse. Apart from that, we will look at the similarities and differences in Kuntowijoyo and Ziauddin Sardar's approaches to the reconstruction of the Islamic science paradigm.

B. METHODS

Based on various problems that will be researched by the author, this type of research is library research, whose data collection techniques are carried out online based on readings of several literature that have information and relevance to the research topic. The nature of this research is descriptive qualitative which is an effort to review research systematically and carefully on facts that have been unearthed through research data sources.

Referring to the above understanding of the nature of this research, then the author will try to find, collect and explore data from various references or books related to the thoughts of Kuntowijoyo and Ziauddin Sardar related to their thoughts on the paradigm of Islamic science. The primary sources that the author uses are Kuntowijoyo's book entitled "*Islam Sebagai Ilmu*" and Ziauddin Sardar's book entitled "*Masa Depan Islam*". The secondary sources that the author uses are other books owned by the figures and also journals or articles related to existing research.

C. RESULT & DISCUSSION

1. The Role of the Science Paradigm and Its Development

There are various ways to define what a paradigm is. It all depends on the person using it (their respective point of view). Proposed by Ritzer, a paradigm is a fundamental review of researchers and scientists about *what should be studied in science* (something that should be studied in science), *what is the question* (what is the question), and *how to answer it* (how to answer) (Ritzer, 1975). Paradigms can also be referred to as general agreement among scientists that can lead to the emergence of scientific groups or subgroups that have differences from each other. This paradigm difference arises because of variations in the theory used, research methods, and tools used to achieve correct understanding (Diamastuti, 2012, p. 62).

According to Capra in his "Tao of Physics," paradigms are the basic foundations that require evidence that supports every assumption they accept. This paradigm plays a role in shaping and providing color in its interpretation of the history of the development of science. Meanwhile, according to Kuhn in his writing entitled "The Structure of Scientific Revolution," paradigms are the results of research synthesis consisting of various elements such as concepts, values, techniques, and so on that are used together in a scientific community to determine the validity of problems and solutions (Diamastuti, 2012, pp. 63–64).

In the author's perspective, a paradigm can be explained as a person's point of view on a fundamental problem that is essential to understanding a scientific discipline or as a basic belief that guides individuals in their daily actions.

Apparently, the view of paradigms in science always changes over time. The birth of a new paradigm is often inseparable from the influence of the previous paradigm. Sometimes, paradigms that come after the previous ones try to correct the weaknesses contained in the previous paradigm.

Paradigm shifts in science Kuhn's opinion often lead to conflicts and can even trigger scientific revolutions. This is due to the efforts of adherents of the new paradigm to shake the dominance of the old paradigm, which is usually firmly held by most scientists.(Arif, 2016, p. 35) As a result, there is competition between adherents of different paradigms, each believing in the truth of their paradigm. However, a paradigm shift like this can also trigger the development of science by bringing new ideas and fresh views (Ulya & Abid, 2015, p. 92).

After understanding the meaning of "paradigm," the question that arises is how one can develop a paradigm of science. In the case of the scientist mentioned above, in an attempt to develop his paradigm, the author sees that the basic principle is the same because it is based on three dimensions in the philosophy of science, namely the ontological, epistemological and axiological dimensions (Widyawati, 2013, pp. 94–95).

a) Ontology Dimensions

Ontology in education concerns what objects are the focus of this scientific study, including issues related to reality and its appearance. Reality refers to what really exists and exists, while appearance is how something looks or is perceived. It is also important to take into account how the relationship between the two is related to the subject or human being.

The ontology of science involves the understanding of the nature of science, truth, and reality related to scientific knowledge. This is inseparable from the way philosophy views what and how existence "exists".

b) Epistemological Dimensions

Epistemology is often considered a synonym of the theory of knowledge. Today, the theory of knowledge is a very important aspect and cannot be ignored. Epistemology in the science of

education deals with how the science of education is acquired, as well as the procedures used to acquire correct scientific knowledge.

The epistemology of science includes aspects such as sources of knowledge, the means used to acquire knowledge, and the methods used in scientific research. The selection of different ontological foundations will result in differences in the choice of these means. These means may include reason (verstand), reason (vernunft), experience, or a combination of reason and experience, as well as intuition. All of these are important components in epistemology and influence how scientific knowledge is acquired and used.

c) Axiological Dimensions

Axiology in education relates itself to what benefits are produced by the science of education, as well as how ethics is related to this science and how to apply that knowledge in everyday life. Axiology of education involves normative values and plays a role in giving meaning to truth or reality encountered in various aspects of life, including in the social, symbolic, and physical-material realms.

According to In Thomas Kuhn's view, the development of science goes hand in hand with the discovery of new facts. Kuhn considered that science is a continuous exploratory effort, and the development of science is highly dependent on the prevailing paradigm. When existing paradigms are no longer relevant or cannot explain phenomena well, scientists will look for new alternatives (Ulya & Abid, 2015, pp. 262–266)**.**

Kuhn Seeing that as in politics and other humane practices, science is also bound by history and the scientific community. When the scientific paradigm faces a crisis and can no longer answer new questions, it triggers the birth of a new paradigm that can radically change scientific understanding, similar to a change in politics.

Thomas Kuhn describe the scheme of development of science in the concept of paradigm with four main phases (Sabila, 2019, pp. 89–92)**:**

a. Pre-Paradigm (Pre-science) phase: This is the initial phase where there is no dominant scientific paradigm yet. At this time, various theories compete and there is no consensus on key paradigms.

b. Normal Science or Ordinary Science Phase: In this phase, a dominant scientific paradigm has been accepted by most scientists. Scientists work within the framework of this paradigm and seek to expand scientific understanding by asking questions and solving problems in them.

c. Phase of Anomalies and Crises or Scientific Revolutions: At some point, existing paradigms may not be able to answer many problems and the emergence of anomalies. This leads to a crisis in the existing paradigm. Scientists began to doubt the correctness of the old paradigm and look for alternatives. This crisis triggered a process of scientific revolution.

d. Paradigm Shift Phase or New Paradigm: In the phase of the scientific revolution, a new paradigm emerges as a better alternative to explain existing phenomena. This new paradigm replaced the old paradigm and became the foundation for the further development of science.

Kuhn describes how paradigm changes occurred in the history of science and how new paradigms replaced old paradigms in a revolutionary process. This concept helps to understand the evolution of science and changes in scientific understanding. Analysis Thomas Kuhn's ideas and how they can be applied to the Islamic scientific paradigm can be explored in the following contexts (Sahbana, 2022, p. 40)**.**

First, Thomas Kuhn's concept of paradigms can be interpreted as a starting point for establishing the philosophical and theoretical foundations of science, as well as describing the dynamics and interactions in the development of discourse within paradigms. This applies both to the formation and rejection of certain scientific paradigms. In the context of Islamic scientific thought, this is a progressive step in understanding the paradigm of Islamic teachings based on established norms, the evolution of thought, its continuity, and also its sensitivity to solving problems faced by

society. The aim of this approach is to strengthen Islam's position as a religion that brings blessings to the entire universe (Sahbana, 2022, pp. 41–43).

Second, the concept of normal science introduced by Kuhn describes a situation in which a scientific paradigm dominates and is used as the primary standard. In the context of Islamic thought, normal science is based on theories derived from Islamic legal sources that are still relevant as norms or guidelines, and their use in practical life does not cause deviations or difficulties. In Islamic studies, normal science can be interpreted as an understanding of Islamic teachings with a theological approach that follows religious norms.

Third, the concept of anomaly proposed by Kuhn refers to the discrepancy between reality and the paradigm espoused by scientists. Anomalous situations arise when existing paradigms cannot provide explanations or solutions to problems that arise, eventually leading to deviations. In the context of Islamic thought, anomalies arise along with the evolution of life and the changing times. Within this framework, there are situations in which the teachings of Islam in its normative theological aspects cannot fully address all the challenges faced by the Muslim community. Therefore, at this stage, the study of Islamic thought is faced with what is known as a crisis, as Kuhn argues.

Fourth, in the concept of scientific revolution according to Kuhn, there is a radical change involving great leaps and drastic transformations, which eventually results in a new paradigm based on more advanced scientific studies and superior methodological methods in solving problems. In the context of Islamic thought, the scientific revolution reflects an attempt to change the understanding and interpretation of Islamic teachings in depth, so as to provide solutions to problems faced in society as a result of changing times.

As stated by Kuhn, the main key in the scientific revolution was a change in methodology. Nature itself does not change suddenly, but the way we look for explanations of natural phenomena sometimes requires drastic changes. In the context of Islamic thought, this does not involve changes to the text of the Qur'an itself. Instead, what needs to be revolutionized is the methodology used in understanding the text.

Islam, which carries the principle of mercy for all nature, contains teachings that can be applied in the development of times and social contexts. Therefore, there is no need to make changes to the text of Islamic teachings itself. The essential thing is to change the human paradigm towards religion, not by revising the Quran to keep up with the dynamics of the times. However, the dynamic process in Muslims' understanding of the text of the Qur'an needs to continue over time. In this regard, the verses of the Quran must be interpreted and interpreted according to contemporary reality. With a careful approach to interpretation and proper reinterpretation, the religion of Islam can continue to be relevant and part of the dialogue with the progress of science and technology (Sahbana, 2022, pp. 41–43).

2. Islamic Science Paradigm Kuntowijoyo's Perspective

To date, there are two models of scientific approach developed within the Muslim community. First, there are those who defend the model of classical Islamic sciences. Although this model is rich in Islamic values, it is often considered limited and less relevant in the face of the challenges of contemporary life. This approach has often drawn sharp criticism from many modern Muslim thinkers.

Second, there are groups that adopting Western sciences that are considered more relevant to today's realities. However, this model is often based on values different from Islam, and it is also hotly debated among contemporary Muslim thinkers (Adiwibowo et al., 2023, p. 568).

With this basis, the idea arose to develop a holistic form of science, which acts as a middle solution to combine the positive benefits of the two previously mentioned paradigms of science. This approach involves integrating Islamic values contained in Islamic sciences with the relevance of

Western sciences to the challenges faced in today's context. The concept of holistic science proposed here refers to a model of science that not only reflects Islamic values and identity, but is also relevant in responding to various increasingly complex life problems (Muslih, 2022, p. 9).

One of the figures who championed the idea of integralistic science was Kuntowijoyo. He developed the idea of integralistic science in the belief that Islam should be the main foundation. His approach is known as "Islamic scholarship," which is rooted in Islamic teachings, especially the Qur'an, as the basis for formulating scientific theories. Kunto argues that this concept acts as an alternative to the process of "Islamization of science," in which the West tries to accommodate Islamic values in science. On the contrary, Islamic scholarship is an intellectual project rooted in Islam and seeks to exert influence on the outside world (Ramadhan & Qamarina, 2023, p. 359). Here is the Construction of Islamic Scientific Paradigm Kuntowijoyo's Perspective (Abidin, 2014, pp. 122–127)

a) Ontological Constructs

Deep In the context of the discussion above, ontology within the scope of philosophy of science involves an understanding of the nature of science, its basic nature, and the truth or reality that is part and parcel of it. In Islam, science is defined as knowledge that reflects something as it is. This knowledge is acquired through a strong belief in the object of research on which it is focused (Rofiq, 2018, p. 167).

Kuntowijoyo has a view that relates science to the concept of culture. For Kunto, culture is a matter of muamalah, so the principle of "all may except what is forbidden" that applies in muamalah also applies in science. However, according to Kunto, this muamalah status can be disturbed when knowledge becomes egoistic, that is, when a person excessively refers to himself and considers himself to be the determinant of everything. In this context, egoistic knowledge can disrupt the harmonious relationship between science and culture that should reflect the principle of muamalah (Ramadhan & Qamarina, 2023, p. 359).

Kuntowijoyo views ontology in terms of ontological construction of Islamic scientific paradigms by considering his view of truth. For him, truth is often misinterpreted as progress, so that views of truth can be influenced by developments. Kunto emphasized that truth is not increasing (non-cumulative), while the progress of science and knowledge is a process that increases (cumulative). Truth does not evolve or change over time, while progress continues to evolve (Ramadhan & Qamarina, 2023, p. 359).

Kunto affirms that the true source of truth comes from God, and in the context of Islam, this is related to the revelations contained in the Qur'an delivered by God to Prophet Muhammad SAW. The theory of truth, according to Kunto, is part of the creed because it falls into the category of basic and fundamental things. The culture of monotheism, which is centered on God, governs basic and primordial principles, while in secondary matters such as technical issues, political structure, and culture, man has complete freedom for creativity (Ramadhan & Qamarina, 2023, p. 400).

Kunto's view of the civilization of monotheism emphasizes the importance of awareness of tawhid as a source of scientific fervor in Islam. According to Osman Bakar, the scientific spirit in Islam first appeared in the field of religious sciences, showing the close relationship between science and awareness of tawhid in Islamic civilization.

b) Epistemological Construction

Kuntowijoyo composed his views on science based on Q.S. Fushshilat [41]: 53. According to this view, sciences can be classified into three categories: kauniyyah (natural sciences, nomothetic), qauliyyah (Qur'anic sciences, theological), and nafsiyyah (humanitarian sciences, hermeneutic). The science of kauniyyah is related to natural law, the science of qauliyyah is related to the law of God, and the science of nafsiyyah is concerned with the meaning, value, and consciousness of man, otherwise known as humanities (Abidin, 2016, pp. 122–127).

Kunto's views on these three types of science are in line with those common in Islamic epistemology. This includes the belief that there are three forms of God's sign or verse that can be the source of knowledge. Qauliyyah verses have the potential to generate knowledge in the field of religion or theology. The kauniyyah verses have the potential to produce a wide range of natural sciences. Meanwhile, human verses have the potential to generate knowledge in various social and humanities fields.

With Classifying the sources of knowledge into the three areas above, Kunto wants to emphasize that these three areas of knowledge are verses of God that must be mastered by Muslims. In particular, Kunto highlighted the important role of qauliyyah verses which in his view could be the basis of a grand theory in science.

In the perspective of Islamic epistemology, the Qur'an, which is a form of revelation, is considered a guiding element that transcends the dimensions of the material world and has a very central role. Kuntowijoyo believes that knowledge derived from the Qur'an is considered knowledge that pre-exists before experience, and has a major role in shaping the understanding of reality. This is due to the belief that the Qur'an is the verses of God that give direction in thinking and acting. In this context, revelation serves as the constitutive element underlying the Islamic paradigm.

Normative values in Islam derived from the revelation system can be conveyed through two channels, namely ideology and science. Islam has the capacity to function as an ideology because it not only shapes perceptions of reality, but also provides the ethical and theological foundation for human action in changing that reality. Therefore, ideology is the result of normative extraction applied in action. On the other hand, Islam can also act as a science by compiling and expounding its normative concepts in an empirical and objective context. In other words, normative values are not only considered as ideologies for action, but also formulated as theories that can be applied in the practice of everyday life.

c) Methodological construction

Kuntowijoyo proposed two important steps in an effort to implement Islamic science, namely integralization and objectification (Abidin, 2014, pp. 124–127)**.**

1) Integralization: It involves integrating human scientific wealth with the principles of revelation, found in the Qur'an and the sunnah of the Prophet Muhammad. The idea of integralization arose because there was a fundamental difference between the secular sciences derived from Western civilization and the spirit of integralistic science promoted by Islam. This difference covers various aspects, ranging from the cradle of science, the process of forming science, the scientific products produced, to the goals of science. This distinction includes ontological (about the nature of existence), epistemological (about how knowledge is acquired), and axiological (about values) aspects.

2) Objectification: After the process of integralization, the next step is objectification. In objectification, internalized values are not only applied subjectively, but also translated into objective categories. This means turning internal values into concrete actions and practices in everyday life. Kuntowijoyo emphasized that the process of objectification should start from the internalization of values, not from the subjectivization of objective conditions.

With Thus, in practice, integralization and objectification must go hand in hand. Integralization connects science with values derived from revelation, while objectification transforms those values into concrete actions in people's lives. These steps are important in efforts to develop and actualize Islamic scholarship in various aspects of life.

d) Ethical Construction

Kuntowijoyo's view of the Islamic paradigm stems from the belief that science is never truly neutral. Science always reflects the biases and interests of its framers (Abidin, 2014, pp. 126–127)**.** Even modern science, which is often considered value-free, is actually also influenced by the values

espoused by its framers, which are generally Western values. This view is in line with the paradigm theory put forward by Thomas Kuhn, which recognizes that scientists work within the framework of a particular paradigm.

Islamic science, operating within the Islamic paradigm, also recognizes the influence of values. Kuntowijoyo believes that science derived from the holy text of the Qur'an has a strong ethical dimension with strong values rooted in Islam. In his work, Kunto often refers to the idea of prophetic or prophetic ethics as an ethical view contained in the social sciences he proposes. This prophetic or prophetic ethics refers to the norms carried by the Prophet Muhammad SAW in conveying his prophetic message and becoming a moral foundation for Muslims. The source of prophetic ethics in the Islamic context is the behavior and teachings of Prophet Muhammad SAW. In other words, the values contained in the teachings of Islam and the principles taught by the Prophet became an integral part of the Islamic science proposed by Kunto.

3. Islamic Science Paradigm Ziauddin Sardar's Perspective

a. Foundation of Criticism

Ziauddin Sardar, who was born in Pakistan in 1951 and raised in Britain, holds a doctorate in physics. He is an independent journalist specializing in reporting on science and technology. Since the early 1980s, he has contributed his writing to a number of leading science magazines. As a correspondent for the journal Nature, Sardar has made visits to Muslim-majority countries to monitor developments in science and technology. During his career, he has produced numerous books covering topics such as The Future of Muslim Civilization and Science and Technology in the Middle East. Sardar has also been an active contributor in discussions around Islamic Science and the future prospects of Islam. In addition, he has also been involved in editing various publications. Together with his colleagues, Sardar has been instrumental in publishing the journal Afkar Inquiry in English, which aims to display ideas related to the Islamization of science.(Zainal Abidin Bagir, 2002).

August Comte, the father of modern sociology, argues that modern society arose when humans shifted from theological and metaphysical thinking to rational thinking. In the theological phase, people believe that there is a supernatural force that governs natural phenomena. In the era of metaphysics, humans use abstract concepts such as nature and cause to explain facts, but there is no longer a divine cause behind reality called positive (Jumadi, 2017, p. 87).

Rational science, which has become the main foundation for modern civilization, in its latest developments, began to shift the role of man as ruler over his fellow man. Science is gradually taking the place that God's revelation originally had as a guide in life, some even predicting that science itself will replace the role of religion. As we already know, positivism, as one of the main paradigms in modern science, is often considered no longer an adequate basis for the development of science. This is because positivism is based on views that are considered incomplete (Arifin, 2020; Malik, 2022, pp. 191–192).

In his book "Postmodernism and the Other," Sardar describes postmodernism as a new form of cultural imperialism originating in the West. According to him, postmodernism is a continuation of colonialism and modernity, thus further marginalizing non-Western cultures and destroying their aspirations and desires. Sardar also explained the concept of *Transmodernity* as a shift from modernity and postmodernism towards a new, more orderly society (Sardar, 1998, p. 266). In the context of the problem *Other Future*, which is a field of study that considers the future, Sardar highlights the ineffectiveness and disadvantages incurred. He stressed the importance of building strategies that can help in rebuilding a better vision of the future (Ibrahim, 2022, p. 156).

Sardar feared the development of science in Muslim countries. Sardar also criticized Muslim groups that disagreed with his views and argued that Islamic ethics could overcome the ill effects of

modern science (Fuady &; Bistara, 2022). He believes that this argument is incorrect because science influences cognitive, so the construction of Islamic epistemology is also important. The environmentalists, or environmentalists, and even the radical Western left that emerged since the 60s are among many Western historians and philosophers who criticize the adverse effects of modern or Western science. They question whether science is objective and universal (Kartanegara, 2003, p. 129).

Therefore, since science is not free of value, people believe that science will be Islamized. Moreover, Muslim scientists do not seek knowledge just out of curiosity; rather, they do so to seek the way to God (Hassan & Quraishi, 2022, p. 77).

According to Sardar, there are four arguments in favor of restructuring science in an Islamic perspective:

1) Each significant civilization in history developed its own distinctive system of science that was different from the others;
2) Western science cannot meet the material, cultural, and spiritual needs of Muslim societies;
3) The history shows that Islamic civilization had also built a unique system of science;
4) Western science has a destructive potential that reaches a fundamental level towards humanity. Sardar offered an alternative solution by restructuring the Muslim intellectual treasures and Islamic science to a very basic level (Buntoro, 2019, p. 82).

In his work, Sardar affirmed the spirit to Islamize science. He revealed that Islam is not only a religion or theology as it is traditionally understood. More than that, Islam encompasses aspects of culture, society, and is a worldview. Therefore, in its vision, Islam, represented in the Qur'an, has the capacity to shape and guide all scientific activities. Use of conceptual words such as *Al-Nazhr, Al-Fikr, Al-Aql, and Al-Qalb* in the Qur'an helps in understanding his argument. These words reflect scientific activity as the methodology or epistemology of science (Hossain et al., 2022, p. 10; Sardar, 2017).

b. Philosophy of Islamic science

The philosophy of Islamic science according to Ziauddin Sardar has three basic components that make up the trilogy of philosophical foundations. It includes the Ontological Foundation of Science, the Epistemological Foundation of Science, and the Axiological Foundation of Science (Asrori, 2020, p. 38). The trilogy of philosophical foundations can be used as a basic framework for alternative development of the Philosophy of Islamic Sciences. The three trilogies of philosophical foundations can be described as follows:

1) Ontological Foundations of Science

According to Sardar, the unique characteristics of Islamic science are its emphasis on the unity between religion and science, the integration of knowledge and values, and the relationship between physics and metaphysics. Basically, science is one of the most important Islamic concepts, as it serves as a formative tool to shape the perspective of Muslims. The notion of 'ilm (science)" encompasses almost all kinds of knowledge, from pure observation to the highest metaphysics (Sardar, 1993, p. 27).

Different types of knowledge, such as metaphysical, empirical, and exact knowledge, belong to a system of knowledge called science. This type of knowledge cannot be understood in isolation, but must be understood simultaneously. "All these forms of knowledge are interrelated and organically connected by the ever-living soul of the revelation of the Qur'an" (Sardar &; Lubis, 1987, p. 104).

2) Epistemological Foundations of Science

Sardar said that science, or science, is the way to solve fundamental problems that face every civilization. Science serves as the outward realization of epistemology and shapes the physical, intellectual, and cultural environment. It also encourages the economic method of production chosen

by a civilization. In short, science creates civilization by imprinting its worldview (Sardar & Lubis, 1987, p. 161).

Epistemology has the power to shape civilization because it guides all dimensions of human study, from philosophy and pure science to social science. The transformation from the conception of the world to reality can be realized with the help of epistemology. Therefore, efforts to reconstruct Islamic epistemology are inevitable to achieve a bright future of Islamic civilization (Sardar, 1993, p. 41).

Epistemology has a crucial role in determining the progress of civilization, because epistemology guides various fields of human study, including philosophy and science. Transforming ideas in a Worldview into reality can be realized by utilizing epistemology. Therefore, achieving a brilliant future of Islamic civilization is unfulfilled without making efforts to revise and update Islamic epistemology (Sardar, 1987, p. 85).

Islamic epistemology emphasizes the importance of encompassing all experience and reality, and supports related methods for extracting and understanding knowledge. All this is done by adhering to the values contained in the Qur'an, which are considered as guidelines for shaping and developing Islamic Civilization. Sardar highlighted that, although science can be understood as a system of knowledge, it can also be acquired through revelation, reason, observation, intuition, as well as from traditional interpretation to theoretical speculation (Iqbal & Adisel, 2021, p. 104; Sardar & Lubis, 1987, p. 104).

He also elaborated that science comes from a system consisting of various elements, such as revelation, reason, observation, intuition, tradition, and speculation. All these elements are related and inseparable from each other in an effort to understand science. In Sardar's perspective, revelation, reason, intuition, tradition, and observation are interrelated and complementary in the process of understanding science. Therefore, it cannot be separated from each other (Sardar & Lubis, 1987, p. 35).

According to Sardar, from the analysis there are nine basic characteristics of Islamic epistemology, (Rehman, 2022, p. 53) namely:

a. Rooted in the framework of absolute guidelines (Qur'an and Sunnah);
b. It is proactive, not passive in this framework;
c. Responding to objectivity as a general issue, not just a personal one;
d. Most are deductive;
e. Combining knowledge with Islamic values;
f. Regard knowledge as inclusive, non-exclusive, and view that subjective human experience has equal value with objective human experience;
g. Seek to regulate subjective experiences and encourage the search for these experiences, from which Muslims derive their basic value commitments;
h. Combining ideas from different levels of consciousness, or subjective experience, so that ideas and images that correspond to one level do not necessarily correspond to another;
i. It does not contradict a holistic, unifying, and humanitarian perspective. This resulted in a new scientific method. (Sardar, 1993)

3) Axiological Foundations of Science

Sardar explained that in Islam, studying or knowledge is considered a religious obligation, and being a Muslim means being actively involved in the development, processing, and dissemination of knowledge. This implies that seeking knowledge or truth in Islam is not impossible, but rather a responsibility that every individual Muslim must fulfill (Mohd & David, 1997, p. 65).

Therefore, for Sardar, the effort to obtain knowledge is considered a form of worship or devotion to God, which implies that the search for knowledge is carried out as a form of obedience

and reverence to Allah SWT. The connection between knowledge and worship implies that seeking knowledge cannot be done if one blatantly violates God's commandments or does not follow the guidelines set by Him (Sardar, 1987b, p. 104).

Sardar regarded Islamic epistemology as a comprehensive picture of knowledge ('ilm) that is closely related to the value aspect (axiological) and considered as an inherent trait of human beings. Therefore, any information has no special meaning or triggers human degradation, isolation, and alienation because there is an inseparable relationship between man and his knowledge (Sardar, 1989, p. 32).

c. Problem Solving Methodology

In addition to the importance of creating an Islamic epistemology, a reliable methodology is also needed to deal with Western domination in Islamic science. This methodology is based on the Islamic world. Sardar said that the method is shari'ah. In his understanding, he embraces shari'ah within a theoretical framework that covers all aspects of human life, including those of a personal, social, political, and intellectual nature. For him, shari'ah is not limited to a narrow meaning as many may understand (Rehman, 2022, p. 51). However, in everyday practice, he provides concepts and guidelines on how Muslims should act in their world affairs. In addition, shari'ah is also considered a system of ethics and values, as well as a practical method used to overcome challenges and problems encountered in current and future situations (Sardar, 1993, p. 91).

The sources of Islamic law can generally be classified into two categories, namely the main source and the supporting source. Principal sources include the Qur'an, the Sunnah of the Prophet, the agreement of the Companions, analogies (qiyas), and the attempt at ijtihad. Meanwhile, supporting sources include istihsan, istishlah, and customary norms ('urf). Therefore, according to Sardar, a good understanding of Islamic law today becomes very important to revive Muslim civilization in the future (Sardar, 1993, p. 91).

Sardar states that Ijtihad is one method that has caused much discord among traditional Muslim intellectuals. Sardar supports the opinion that the door of ijtihad has not been closed, but that Muslim civilization and scientific progress are hampered by the understanding that the door of ijtihad has been closed. For this reason, Sardar stated that Muslims should reform back the idea of ijtihad. Ijtihad according to Sardar has two important characteristics. First, he focuses on problems that arise in real-life situations. However, the second nature is to spread it. That is, there are no clear boundaries. In contrast, the traditional discipline area is cut and pulled from the entire range of the subject. In other words, here requires an interdipliner and multidisciplinary approach (Gada, 2021, p. 150; Sardar, 1993, p. 95).

Sardar asserted that ijtihad should be done jointly by groups of scholars who meet the requirements and have a broad understanding of actual conditions. This is because doing ijtihad individually is very difficult because the requirements are very strict. Ijtihad and qiyas could be vital aspects in future research methodologies. That is, ijtihad can be a dynamic source of Islamic law, while its static source is the texts of the Qur'an and al-Sunnah (Sardar & Lubis, 1987, pp. 125–126).

d. Formation of Integrative Islamic Science Paradigm

Because people continue to think, understanding is formed which results in dualism in the way of understanding and practicing science. Therefore, to develop or update science with an Islamic perspective, it is necessary not only to adjust orientation, but also to merge between general science and religious science (Iqbal & Adisel, 2021, p. 112).

In addition, paradigm reconstruction, or rearrangement of thought, must prevail in the area of Islamic studies (Islamic sciences). If a reconstruction of the paradigm from the area of conventional science to the area of revolutionary science is impossible, then the term research will no longer be relevant. Instead, the word research should be replaced with Islamic theology or dogma (Abdullah,

1996, p. 109). Reflecting on the progress of modern western science, as explained by Thomas S. Kuhn, the scientific revolution is the main factor that drives the development and advancement of science in the West (Farid, 2021, p. 91).

The idea that science can be Islamized is rooted in the belief that science is neither neutral nor value-free. In fact, science always reflects the values that shape the world perspective of the society that developed it. Therefore, Sardar stated that: "Science is inseparable from worldviews and belief systems." Muslim scholars should focus on building Islamic-based scientific paradigms rather than trying to Islamize disciplines that have been developed in Western social, ethical, and cultural contexts. Through this approach, they can more effectively meet the immediate needs of Muslim communities (Sardar & Intellectuals, 1998, p. 35).

According to Sardar's view, the alternative to developing the Philosophy of Islamic Science is a natural consequence of the Reconstruction of Islamic Epistemology. Sardar himself proposed the idea of Reconstructing Islamic Epistemology as part of a larger initiative to restore and re-advance Islamic civilization. For Sardar, restoring Islamic civilization began with improving the foundation of Islamic epistemology. This includes the acceptance of Islam's holistic worldview and the integration of Islam's enduring universal values. Sardar stresses that true Islamic epistemology does not only rely on the authority of revelation, but also gives a significant role to reason. According to Sardar's view, the progress or regression of Islamic civilization reflects the progress or regression of intellectualism in Islamic society, which in turn affects the fate of Islamic civilization itself (Wiwaha, 2018).

Sardar chose a paradigmatic approach to reconstruct Islamic scholarship. The two types of paradigms used are the Knowledge Paradigm and the Behavioral Paradigm. The Knowledge Paradigm focuses on the central Islamic principles, concepts, and values associated with a particular field of research, while the Behavioral Paradigm establishes ethical norms (akhlaq) that direct intellectual action. All these principles, concepts, and values can be found in the Qur'an, the Sunnah of the Prophet, and the intellectual heritage of Islam, all of which must be evaluated taking into account contemporary realities (Sardar, 1987b, p. 103).

The first paradigm focuses on important values, principles, and concepts in Islam related to a particular field of study. The second paradigm, on the other hand, establishes ethical guidelines that allow scientists and academics to work independently. It is clear that the main source of these values, principles, and concepts lies in the Qur'an, the life of the Prophet, and Islamic intellectual property. However, everything needs to be evaluated from a contemporary perspective. Furthermore, like this paradigm, disciplines fall into two categories. The first is science, such as mathematics, grammar, sociology, and physics. The second is the discipline that shapes human behavior, both individual and group, towards structured self-control, such as educating a child by parents or guiding a group in complex tasks in medicine and science (Sardar, 1987, p. 105).

Sardar then stated that if this research is carried out according to a fully developed Islamic paradigm, these two disciplines will emerge by themselves according to the needs of the Muslim community. This will produce disciplines that can be used to meet the material, cultural, and spiritual needs of Muslims. Therefore, these paradigms are the basis for the revitalization of Islamic epistemology (Sardar, 1987b, p. 105).

By exploring and accommodating philosophical elements that include ontology, epistemology, and axiology in the classical Islamic tradition of science, we can try to develop alternative philosophies of science in the context of Islamic sciences that are in accordance with the demands of the current times. Sardar believed that Islamic civilization in its golden age was a great, sophisticated, and successful civilization. This civilization gave birth to many intellectuals and polymaths who managed to work within the framework of a true paradigm of science. They were

able to synthesize knowledge from previous civilizations, fundamentally transform it, and integrate it fully within the scientific framework of Islam (Gada, 2021, p. 219).

4. Synergy of Islamic Science Paradigm Concepts Between Kuntowijoyo and Ziauddin Sardar

Kuntowijoyo and Ziauddin Sardar have similarities in their views regarding the reconstruction of the paradigm of Islamic science. Both stressed the importance of integration between Islam and science, as well as the need to reconcile traditional understanding with modern knowledge. They also stressed the importance of an interdisciplinary approach and a balance between spirituality and scientific inquiry (Abidin, 2016, p. 56).

Kuntowijoyo and Ziauddin Sardar both acknowledge the complex interaction between modern science and Islamic scholarship. They argue about the need to study and understand Islamic principles, concepts, and values in relation to a particular field of research. They also stressed the importance of ethics in guiding intellectual endeavor and action (Sardar &; Lubis, 1987, p. 23).

From this, it can be understood that the reconstruction of Islamic science Kuntowijoyo and Ziauddin Sardar have several synergies of views, including:

a) Integration of Islam and Science

Kuntowijoyo and Ziauddin Sardar both stressed the importance of integrating Islam and science. They argue that Islam does not contradict modern science, but rather can provide relevant guidance and frame of mind in understanding and developing science.

b) Interdisciplinary Approach

Both also advocate an interdisciplinary approach in building the paradigm of Islamic science. They recognize that science is inseparable from social, cultural, and historical contexts. Therefore, they combine various disciplines, such as history, sociology, anthropology, and philosophy, in understanding and applying Islamic principles in a modern context.

c) Criticism of Orientalism

Kuntowijoyo and Ziauddin Sardar both criticized orientalism, which is a view that denigrates and narrows understanding of Islam and Islamic scholarship. They argue that a broader and contextual understanding of Islam is needed, and acknowledge the great contribution that Islamic scholarship has made to history.

d) The Importance of Ethics and Spirituality

Both also emphasize the importance of ethics and spirituality in science. They argue that science should not be a mere pursuit of knowledge without considering its ethical and spiritual implications. They advocate a balance between knowledge and moral values in the development of science (Abidin, 2016, p. 56).

Overall, Kuntowijoyo and Ziauddin Sardar share the same goal of reconstructing the paradigm of Islamic science by integrating Islam and science, promoting an interdisciplinary approach, critiquing traditional understandings, and emphasizing the importance of ethics and spirituality.

5. The Conflict of Islamic Science Paradigm Concepts Between Kuntowijoyo and Ziauddin Sardar

There is no significant contradiction between Kuntowijoyo and Ziauddin Sardar in the context of the reconstruction of the paradigm of Islamic science, in their works. Although both have different cultural backgrounds and views or thoughts, they share similar views in connecting Islam with science and updating the paradigm of Islamic science.

Kuntowijoyo, with an approach rooted in Indonesian culture and history, integrates Islamic

values with the local context. He stressed the importance of understanding and applying Islamic principles in the Indonesian context. Ziauddin Sardar, on the other hand, traces the interaction between modern science and Islamic scholarly traditions in a global context that is no longer close. He also advocated an interdisciplinary approach in understanding and integrating science and religion (Sardar &; Lubis, 1987, p. 25).

Despite differences in cultural background and local-global focus, Kuntowijoyo and Ziauddin Sardar have aligned views on developing critical thinking and updating the paradigm of Islamic science. Both sought to bring Islam into contemporary scientific discourse and link modern science with Islamic scholarly traditions.

However, there are some differences in views due to the local-cultural understanding of each character, including:

a) Local-Global Context

Kuntowijoyo emphasized the importance of the local context in understanding and applying Islamic science. He emphasized Indonesian local values and traditions in building a paradigm of Islamic science that is relevant to his society. Meanwhile, Ziauddin Sardar focused more on the global context in linking science and Islam. He highlighted the complex interplay between modern science and Islamic scholarly traditions in a broader global context (Sardar &; Lubis, 1987, p. 23).

b) Interdisciplinary Approach

Kuntowijoyo emphasized the importance of an interdisciplinary approach in building an Islamic science paradigm. He integrated various fields of science, including history, sociology, and anthropology, in order to understand and apply Islamic principles in contemporary situations. Ziauddin Sardar also advocated an interdisciplinary approach, but focused more on the integration between science and religion in a broader global context.

c) Critique of Traditional Understanding

Kuntowijoyo criticized traditional understandings that are unable to face the challenges of modern times. He highlighted the importance of reflecting back and updating traditional understandings to match them with the development of science and the demands of society. Ziauddin Sardar also criticized traditional understanding, but focused more on criticism of orientalism and the dominance of Western thought in Islamic understanding.

d) Balance of Spirituality and Science

Kuntowijoyo and Ziauddin Sardar both stressed the importance of balancing spirituality and science in an Islamic context. Kuntowijoyo, with his deep understanding of Javanese culture and strong Islamic values, emphasized the integration of Islamic principles with local culture and history. He believed that spirituality and science should go hand in hand, and that Islamic teachings should be applied in a way relevant to the local context (Abidin, 2016, p. 56). Meanwhile, Ziauddin Sardar also advocated a balanced approach between spirituality and science. He explores the complex interplay between modern science and Islamic scholarship, with the aim of integrating the two meaningfully and relevantly in a global context (Sardar, 1987b, p. 23).

D. CONCLUSION

From the results of research regarding the reconstruction of the Islamic paradigm from the perspective of Kuntowijoyo and Ziauddin Sardar, the author can conclude several important points, namely:

1. Kuntowijoyo's view related to the reconstruction of the paradigm of Islamic science is to emphasize the importance of updating the paradigm of Islamic science in order to accommodate the

development of the times and contemporary challenges. He argued that the paradigm of Islamic science must be able to integrate Islamic values with the local, cultural, and historical context of Muslim societies. Kuntowijoyo also emphasized the importance of an interdisciplinary approach in understanding and developing Islamic science.

2. Meanwhile, Ziauddin Sardar also has views that are in line with Kuntowijoyo in the reconstruction of the paradigm of Islamic science. Sardar stressed the importance of linking modern science with Islamic scholarly traditions in an increasingly connected and complex global context. He argued that the paradigm of Islamic science must be able to integrate modern knowledge with Islamic values, as well as update traditional understanding by considering the development of science and technology.

3. The similarity between Kuntowijoyo and Ziauddin Sardar's approach to the reconstruction of the paradigm of Islamic science is the integration between Islam and science, an interdisciplinary approach, and the renewal of the paradigm of Islamic science. They argue that Islam and science do not contradict each other, but can complement each other. They also advocate an interdisciplinary approach in understanding and developing Islamic science, and strive to update the paradigm of Islamic science in order to accommodate the times.

4. The difference between Kuntowijoyo and Ziauddin Sardar's approach lies in the emphasis on local-global context, cultural background, and focus on interdisciplinary approaches. Kuntowijoyo further emphasized the importance of understanding and applying Islamic principles in the local context, especially in the Indonesian context, with the integration of Islamic values with local culture and history. On the other hand, Ziauddin Sardar focuses more on the global context in linking science and Islam, with emphasis on the interaction between modern science and Islamic scientific traditions in a global context.

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