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MORALITY BEFORE KNOWLEDGE

Islamization of science: Ziauddin Sardar's critique of the universality of science

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ABSTRACT

Introduction: Science, which initially emerged due to the awareness of the need for Islamic values' influence on the development of knowledge, in Sardar's perspective, becomes a critique of the universality of science. This underscores the need for further research regarding Sardar's concept of Islamic Science as a critique of the universality of knowledge. **Methods:** This qualitative research explores Ziauddin Sardar's critique of Western-influenced universal science. It employs a literature study to analyze Sardar's thoughts using various methods. **Finding**: The findings reveal that Islamic science, rooted in ethical principles, offers an alternative to Western science, which often overlooks diverse paradigms and local knowledge systems. While Islamic science excels in addressing region-specific issues, it may struggle with complex problems. In contrast, Western science, considered global, has historically caused environmental challenges by disregarding non-conventional paradigms. Therefore, Islamic science, with its inclusive approach to knowledge, presents a potential solution to the crises stemming from the dominance of Western scientific paradigms. **Conclusion:** Islamic science is a comprehensive paradigm, similar to Western science, that can serve as a framework for scientists from various fields of knowledge. The Islamic paradigm attempts to critique the concept of universality, which has been one of the values embraced by the Western scientific paradigm. This concept has been one of the reasons why scientific revolutions have occurred slowly.

KEYWORDS: **:** Ziauddin Sardar, islamic science, universalism.

1. Introduction

One characteristic of science asserts that it should be universally applicable, without geographical limitations, so that it can be understood by all its users. As long as the knowledge remains relevant and there is no better alternative theory, it can be utilized by anyone worldwide (Semiawan, 2005: 112). This characteristic has greatly developed among Western scientists, particularly in the natural sciences. However, in reality, science is often influenced by politics, especially during World War II. This simultaneously emphasizes that science is not value-free. Despite not being value-free, this does not deter scientists from upholding the universality of science. To this day, this characteristic is still believed by scientists, with the enduring influence of Western scientific products in other parts of the world, including within the Islamic civilization.

The spread of Western knowledge in Islamic civilization was followed by the emergence of the Islamicization of knowledge movement. One of the figures in this movement was Al-Faruqi, who was later criticized by Ziauddin Sardar. Sardar argued that the perspective of Islamicizing knowledge would, in fact, lead to the Westernization of Islam. This is because, according to Sardar, Western disciplines are shaped by Western perceptions, concepts, ideologies, language, and paradigms. Sardar also critiqued Al-

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Faruqi's belief that mastering Western science was a prerequisite for mastering Islamic science, considering it a form of Western-influenced exploitation of Islamic knowledge. Sardar then presented the concept of Islamic Science as an alternative to the Islamicization of knowledge (Taufik & Yasir, 2017: 121).

Sardar also criticized young Muslim scholars. He believed that much of the knowledge they studied was irrelevant. According to him, the learning of subjects like economics, sociology, architecture, engineering, and biology did not train these scholars to advance the values they adhere to. This is because, in his view, these academic disciplines are only relevant to the capitalist and socialist structures, values, and norms of the West. This leads to his argument that knowledge or information is not value-free. There is always a value system at play in the collection and utilization of knowledge. Sardar contended that knowledge from the West only serves the interests of the West (Sardar, 1989: 21-22).

Ziauddin Sardar attempted to compartmentalize knowledge based on their respective regions and cultures. His desire simultaneously critiqued Western Science, which sought to establish a universally applicable body of knowledge. On one hand, this inclination led to the segmentation of knowledge based on regions, such as Western physics and Islamic physics. On the other hand, Sardar's desire had a strong foundation for realization. There are several speculative theories in natural sciences that conflict with Islamic values. For instance, many theoretical physics theories are heavily influenced by materialism. Islamic scientists must inevitably align with this trend if they wish to engage in the field of physics.

Sardar's concept of Islamic Science not only reminds Muslim scholars not to blindly follow the Western scientific development heavily influenced by Western materialist philosophy but also serves as a critique of one of the characteristics that has long been believed by all scientists. Islamic Science, which initially emerged due to the awareness of the need for Islamic values' influence on the development of knowledge, in Sardar's perspective, becomes a critique of the universality of science. This underscores the need for further research regarding Sardar's concept of Islamic Science as a critique of the universality of knowledge.

2. Methods

This research is a qualitative study in the field of philosophy. Specifically, this type of research is a factual-historical study of a figure. The object of this research is the thoughts of Ziauddin Sardar regarding Islamic Science as found in his written works. The theory utilized in this research is Thomas Kuhn's paradigm of science. This research employs a literature review method for data collection. The data, consisting of Ziauddin Sardar's written works, will be systematically collected and then inventoried before undergoing further analysis. The data analysis techniques used in this research include interpretation, internal coherence, historical continuity, and heuristics.

3. Result and Discussion

3.1 Islamic science and western science

Western civilization generally holds the view that knowledge and religion are two contrasting and conflicting elements. Contrast, in this context, implies that these two aspects have no connection and each follows its own path. In this regard, knowledge is related to worldly life. As for religion, it pertains to both worldly and spiritual matters. In the Western perspective, knowledge is solely associated with the worldly, while the hereafter is considered an illusion. Conflict, on the other hand, signifies that the presence of religion is seen as hindering the progress of knowledge. The two are in opposition and cannot be reconciled (Soelaiman & Putra, 2019: 14-15).

Such a perspective is certainly contrary to the true values of Islam. From the Islamic perspective, even if there is a term like "dichotomy of knowledge," it is merely used as a means of distinction or classification of different fields of knowledge based on their respective characteristics, in accordance with ontological, epistemological, and axiological aspects. Islam does not recognize an excessive and discriminatory dichotomy of knowledge, let alone prohibit one over the other. On the contrary, Islam positions them in parallel, as long as they provide positive value and benefit to humanity in order to bring goodness to both worldly and hereafter life (Idris, 2009: 9).

The concept of knowledge in Islam is rooted in faith and driven by the Quranic encouragement to learn, explore, and investigate natural phenomena. Therefore, since classical times, Islamic states have promoted scholarly activities through phases of translation, assimilation, and investigation, leading to remarkable advancements in the natural sciences and technology. These contributions have had a positive impact on the security and well-being of both the nation and the world on a global scale (Idri, 2015: 55)

If we refer to H.F. Zarkasyi, there are five differences in the elements of the Islamic worldview and the Western worldview, namely (Nashori, 2020: 64)

Table 3.1 Elements of the islamic and western worldview

No	Element	Islamic worldview	Western worldview
1	Principle	Tauhid	Dichotomy
2	Source	Revelation, mind, experience, and intuition	The reason, speculation, and philosophy
3	Sifat	Authenticity and finality	Rationality, openness, and always changing
4	Reality meaning	Based on metaphysical studies	Social, cultural, and empirical views
5	Object of study	Visible and invisible	Community Values

There are four arguments by Ziauddin Sardar that are often quoted when discussing the concept of Islamic Science. Firstly, different civilizations will produce different sciences. Secondly, Islamic science has its unique qualities and distinctions when viewed from a historical perspective. This can be seen from the nature and character of Islamic science itself. Thirdly, Western science has destructive qualities and is a threat to humanity itself. Lastly, Western science is considered unable to meet the spiritual, cultural, and physical requirements and needs of Islamic society (Sadrar, 2006).

There are fundamental differences in the aspects of ontology, epistemology, and axiology of knowledge between the Islamic and Western scholarly traditions. These differences are the result of contextualization processes within each civilization, influenced by the social and cultural aspects surrounding them. This is why it is necessary to understand the historical roots when examining these differences. The differences between the Islamic and Western approaches to science, according to Ziauddin Sardar, can be seen in the following table (Azrar, 2017: 34):

Table 3.2 The differences between the Islamic and Western approaches

Western Science	**Islamic Science**
Believe in rationality	Believe in revelation
Science for science	Science is a tool to obtain the pleasure of Allah; it is a form of devotion that involves both physical and spiritual elements.
The only method to attain the truth.	There are many methods that can be based on reasoning, as well as revelation.
Ignoring the aspect of emotions to achieve rationality.	Human emotions are needed in the development of science.
Science is impartial or unbiased. Scientists should focus on the development of knowledge.	Science favors the truth. Scientists should consider the impact of the knowledge they develop.
Science should not be biased in the sense that truth depends on proving operations rather than the personal side of researchers..	There is a subjective aspect to science. The validity of a statement is also influenced by the background and intentions of the researcher.
The truth of science is based only on convincing evidence.	The truth of science is always obtained from unconvincing evidence. Scientists must practice making decisions based on unconvincing evidence.
Analysis is the dominant method to achieve scientific progress.	Synthesis is the dominant method, including synthesizing knowledge and values.
Science is something complex, so it must be broken down into sub-disciplines.	Prefer a holistic approach. Science should be approached holistically and interdisciplinary.
Regarding universality, although science is universal, its results will only benefit those who can afford it. Confidentiality in science is allowed.	The results of scientific research are for the benefit of all humanity. Knowledge is not a commodity for buying and selling. Keeping research results secret is contrary to morality.
Science is not good, but it is also not something bad.	Science, like human activities, can be evaluated, either positively or negatively.
Scientists should ignore any social, political, and ideological influence..	The activities of scientists have a responsibility to society.
The results of research in the form of new knowledge are the most important and deserve primary attention.	Science is only a way to understand the greatness of God, so God, who should be the most important, can receive primary attention.
Have complete freedom. All suspicions about science should be avoided.	Science is something valuable, so it must be continuously monitored and subject to ethics.

Freedom in using methods, including research materials, such as animals, humans, etc.	There are ethical limitations in conducting research.

In Western countries, large-scale basic research is funded with the assumption that it will provide support for certain technologies or because it follows trends. However, in Islamic countries, research cannot be funded solely based on expectations or trends. It must be target-oriented. It must adhere to research systems that consider the needs, demands, and interests of the indigenous population, and encourage the implementation and local industrial research. It must be related to pressing national issues. Nevertheless, this should not be interpreted as political interference, but rather the use of science as an important tool for national development (Sardar, 1998: 127)

3.2 Islamization of science and Ziauddin Sardar's critique

The Quran fundamentally never mentions distinguishing between good and bad knowledge, unlike how it distinguishes between believers and disbelievers among humans and jinn. Knowledge remains true and neutral, and there is no such thing as "infidel knowledge" or "Islamic knowledge." Based on this, classical Islamic philosophers generally did not recognize the term "Islamization of knowledge," even though they studied and even mastered knowledge originating from Greece, Persia, and India. Philosophical figures such as Al-Kindi, Al-Farabi, and Ibn Rushd focused more on providing evidence that the knowledge and philosophy acquired from foreign nations were not in conflict with Islamic law. In fact, Islamic law encourages and even obliges Muslims to study these sciences (Omar, 2017 : 17-18).

Al-Faruqi believes that the process of Islamization of knowledge is not the process of Islamizing knowledge, as the literal meaning of Islamization of knowledge suggests, but rather refers to the purification of true knowledge from destructive elements such as ill intentions, ignorance, bias, envy, and others. Islamization also simultaneously involves injecting Islamic principles into the principles, methodologies, strategies, data, objectives, information, and inspiration of a discipline such as in the field of science and technology (Omar, 2017: 20).

The initial meaning of the Islamization of knowledge is to add Islamic values, particularly those derived from the Quran, as the foundation of existing social science theories. One example is the Islamization of sociology, which incorporates Quranic verses related to family life, social issues, law, and culture into existing sociology textbooks. However, when critically examined, the goal of this movement is not to add Islamic references to the existing knowledge database, but rather to evolve social sciences with an Islamic epistemological paradigm (Ahmad, 2012: 266).

The emergence of the Islamization of knowledge in the field of philosophy is based on the effects of Western capitalism and imperialism on Islamic countries, which resulted in the use of European languages as administrative languages. There are three responses to this condition. First, there are those who reject the Western education and thinking system. Second, the education system is adopted with the aim of facilitating and becoming part of the structure of imperialist power, in order to gain economic benefits by establishing friendships with Western nations. The third response is to adapt the features of this new system that are considered economically, politically, and educationally beneficial for the Muslim community while incorporating elements of religiosity into it. Unfortunately, none

of these responses have the potential to give birth to independent, creative, and holistic thinking. The Islamization of knowledge then emerged to question the assumptions of Western social sciences and produce holistic knowledge based on the Islamic epistemological paradigm (Ahmad, 2012: 272-275).

Not In essence, Sardar is one of the proponents of the Islamization of knowledge in philosophy, but according to Sardar, Islamization is not simply the synthesis of modern sciences with Islamic sciences. Islamization should begin with constructing a worldview based on Islamic epistemology. According to Sardar, the values of the Middle Ages directly or indirectly influenced the development of knowledge during and after that era. This is also a factor that leads to a mismatch when applying such knowledge in countries with Islamic values and culture.

Modern rationalist science, according to Sardar, is based on Christian philosophy. Therefore, if there are changes to the underlying assumptions that alter that philosophy, it will also transform science into a new form. Sardar desires a science that is based on the assumptions found in Islamic teachings, which will then transform modern science into something different from what is currently evolving (Ahmad, 2012: 30).

According to Sardar, there are two reasons for not using conventional technology from the West, namely its subversive nature culturally and its highly destructive nature. When a technology, like the Concorde aircraft, lands in Bahrain, it also brings the ideology of its creators. It is not uncommon for technology to be chosen not based on the existing economic conditions, production, and organization, but rather determined by ideology and other factors (Ahmad, 2012: 168-70)

3.3 Local knowledge and global knowledge

The dichotomy between the concept of Sardar's Islamic Science and the concept of the universality of knowledge is closely related to the dichotomy between local knowledge often contrasted with global knowledge or universal knowledge. In this context, "local" implies aspects of plurality and relativity. Local knowledge can exist at the level of a village, region, country, or even in a more global sector. In this case, global knowledge refers to the contextualization based on social space and time. The dichotomy between the two is not something new and has been a discourse in the field of anthropology since World War II (Bauchspies et al, 2006: 97-98).

Global knowledge itself in this context cannot be equated with Western knowledge or even scientific knowledge. However, if global knowledge is understood as knowledge that is widely disseminated and easily accessible by people around the world, then in the context of natural resource management, that knowledge is scientific knowledge or can also be associated with Western knowledge or Western science (Choesin, 2014: 5).

On the other hand, the Islamic science provided by Ziauddin Sardar at present is nothing more than a local science that can be precisely applied according to the conditions of Islamic civilization. Local knowledge itself has its own advantages compared to global knowledge, especially in relation to environmental aspects. Local knowledge generally looks specifically at the local conditions around it. For example, local knowledge may have the best ideas on how a plant grows and develops over time or how bird migration occurs. Local knowledge can also indirectly identify the impact of a phenomenon, such as the socio-cultural impact resulting from biological resources (Gregory et al, 2007: 49).

This is what later becomes one of the factors why Sardar wants the Muslim community to create a local knowledge system known as Islamic science. Ziauddin Sardar himself is one

of the figures who highlights environmental issues, especially regarding how the development of Western science has resulted in some environmental damage. In addition, the fact that Sardar's thinking is also greatly influenced by environmental figures like Jerome Ravertz and Rachel Carson. This background forms the basis of Sardar's thinking in wanting a local knowledge system among the Muslim community.

Local knowledge does indeed have great potential, especially in relation to its compatibility with the surrounding environment. However, this type of knowledge also needs to be understood as having many limitations, especially in understanding complex environmental issues and dealing with significant uncertainty (Zamzami, 2014). Based on these reasons, there is a need for the development of a solid social system among local knowledge experts before this knowledge system can be relied upon to solve existing problems in society, especially those that are complex.

There are still few Muslim scientists working within the framework of the Islamic science paradigm, which means that their knowledge is not yet mature. Islamic science is still unable to stand on its own. Western science is still needed to identify the problems that exist in Islamic civilization. The dichotomy between local science, in this case, Islamic science, and global science, often proposed by Sardar, will actually make Islamic civilization fall further behind because it has to explore again what was already known by humans through Western science and adapt it to Islamic epistemology.

The distinction between local and global knowledge is gradually fading over time as the political categorization attached to the 19th century between domestic and foreign diminishes. Local knowledge must be interdependent with global knowledge, where globalization will always incorporate localization values, so local knowledge should not be seen as isolation and purification. The term "universal" itself should be understood as being able to move from one place to another while adapting to the place where that knowledge is applied (Bauchspies et al, 2006: 100).

The connectionist model is one option for breaking down the boundaries between local knowledge and global knowledge. This model is developed in cognitive anthropology to help understand how old and new knowledge are processed together to generate interpretive schemes and actions that are relevant to existing social situations. Thus, the encounter between local knowledge and global knowledge does not always result in choosing one over the other. If we follow this model, the differences between local knowledge and global knowledge will no longer be significant (Choesin, 2014: 1-7).

In reality, it must be acknowledged that the exploration of the universe is currently dominated by the Western world, so Islamic science should not be forced to completely detach itself from Western scientific knowledge. In this context, the idea of Islamicizing Al-Faruqi's knowledge is more reasonable than simply forming a new scientific knowledge system built on an immature epistemological basis. The connectionist model can provide a middle ground where Islamic science can maintain its values and scientists can still work on complex topics that may not be solvable solely through Islamic science.

3.4 The position of islamic science in the universality of western science

The future of Islamic science is still uncertain given the strong dominance of Western science, which even has the ability to influence religious studies. There is doubt about how Islamic science can sustain itself in the face of the Western desire to make their values universal, with the emergence of universal characteristics in the development of the

philosophy of science. These universal characteristics simultaneously perpetuate their modern scientific paradigm above other local knowledge paradigms.

Sardar certainly recognizes that there needs to be a strong argument to defend the sustainability of Islamic science while criticizing the universal concept brought by the West in developing their knowledge. One of the reasons Islamic science is still upheld is because the universality of Western science is not something autotelic or apriori, but rather a historical coincidence (Sardar, 1998: 81-90). If we refer to the history of the development of argumentation, it is reasonable to consider the progress of knowledge and civilization in the Eastern world, such as India, China, and Islamic civilization, as equally significant as the West in the past. It is a historical coincidence that currently, Western knowledge and values are more widely known to the public compared to those originating from the East.

Sardar further explains that there are two types of paradigms in formulating contemporary Islamic epistemology. These paradigms are the scientific paradigm and the behavioral paradigm. The scientific paradigm emphasizes the principles, concepts, and vital Islamic values that are relevant to specific studies. On the other hand, the behavioral paradigm focuses on determining ethical boundaries, which allows scholars and scientists to work freely (Taufik & Yasir, 2017: 122).

From the perspective of the philosophy of science, Sardar's statement indicates that Islamic Science can have two roles. These roles are related to the epistemic value and non-epistemic value of knowledge. Islamic Science can either stand as an epistemic paradigm, alongside the rapid globalization of Western science, or it can serve as an ethical paradigm for scientists. Ziauddin Sardar wants Islamic Science to play a role in both aspects. However, if we want to be realistic, the most feasible condition at present is to use it as an ethical guide for scientists rather than forcing it to be the epistemic foundation for the development of knowledge. This is also supported by Sardar's thinking, which focuses on the environmental impacts caused by Western development and can be used as a weapon to criticize Western science.

Western Science, which has become universal, has proven to have many shortcomings that have been revealed by environmental figures like Rachel Carson. Rachel Carson's actions subsequently led to the emergence of Eastern values as alternative paradigms in science and development. Islamic Science, as conveyed by Ziauddin Sardar, has a responsibility towards society and considers the impact of the knowledge it develops, unlike Western science, which tends to disregard social, political, and ideological influences and only focuses on the development of knowledge. This is also related to the characteristic of Islamic Science, which takes into account human feelings (Azhar, 2017-34)

The concept of universality in science advocated by the West has had a significant influence on the impact of scientific development during the Green Revolution. Many studies conducted by environmental experts on the dangers of pesticides were ignored by scientists at that time. These studies were never utilized by scientists until Rachel Carson's work titled "Silent Spring" shook the world. This case illustrates how knowledge that has not been universally accepted is disregarded in Western science. The paradigm of using synthetic pesticides, which has become the norm in science, is considered more universal than the paradigm that criticizes its use.

It took a considerable amount of time, from the post-World War II era until the publication of Rachel Carson's work, to change the paradigm of integrated pest management. This lengthy period resulted in an enormous impact on the environment. This prolonged paradigm shift is one of the consequences of the concept of universality in science offered by the West. In this regard, according to Feyerabend, science, or Western science in this case, is considered to have been comfortable sitting on its "throne," refusing to accept

truths from other forms of knowledge (Mustakim, 2020: 6). This is certainly different when compared to Islamic science. The Islamic values in Islamic science do not simply disregard other systems of knowledge and do not easily dismiss paradigms outside of the normal science.

Referring to the relationship between local and global science, an alternative that can be proposed is to keep modern science as a Western legacy in its place, but not make it the norm of science, let alone the only knowledge that is worthy and applicable to all cultures. Islamic science, along with other forms of knowledge, stands on their own epistemological foundation and becomes an alternative with the same position as Western science or global science.

3.5 Islamic science as a new paradigm

Islam as a paradigm means that Islam is not only seen as a religion with a set of rituals or as a law with rules and prohibitions, but as a comprehensive and systematic paradigm. This paradigm encompasses principles and a framework of concepts found in the Quran and Sunnah. These principles form the general rules of behavior and development and establish the general boundaries within which the Muslim civilization must grow and flourish (Wiwaha, 2018: 78).

Furthermore, according to the thoughts of Thomas Kuhn, something is said to be a paradigm if it is collectively owned or believed by a scientific community, where the members of that scientific community believe in that paradigm (Kuhn, 2017: 121). Based on the statement, if Islamic science is to be considered a paradigm, there must be a scientific community that first believes in it as a paradigm and adopts it as the principles and standards of scientific practice. Islamic science must first gain popularity among Muslim scientists, creating a community that embraces it as a paradigm.

When looking at the history of Islamic scientific knowledge, it can be seen from two perspectives. Firstly, Islamic science as a field that has its own paradigms and history within it. As a discipline, Islamic science encompasses many theories, some of which form a paradigm that at one point dominated normal science. At certain periods, scientific revolutions occur, leading to paradigm shifts. On the other hand, Islamic science can also be viewed as a paradigm within a larger scientific community.

According to Thomas Kuhn's paradigm theory, before expecting a scientific revolution that brings the Islamic science paradigm to the forefront and even dominates normal science, it is necessary to ensure that there is a crisis within the old paradigm, in this case, the Western science paradigm. This paradigm crisis is related to the impact of rapid scientific development during the industrial and green revolutions on the environment.

Paradigmatic errors in the development of scientific knowledge have long occurred, especially in the relationship between economics and ecology, which are often seen as contradictory or opposing. Modern society has been trapped by the capitalist economic system, replacing the natural and integrated traditional informal economic systems with a formal modern economic system that relies on modern technology and scientific instruments to dominate and conquer the surrounding environment in pursuit of human prosperity (Keraf & Chapra, 2014: 152).

The origins of the Western scientific crisis, when traced back far enough, can be found in the initial use of chemicals in agriculture. Most of the synthetic chemical industry for pest control itself emerged during World War II. Like technology born during wartime, initially, these chemicals were intended for war purposes. This technology was later found to be

useful for killing insect pests, which were initially used as test specimens before eventually being used to harm humans (Carson, 1990: 14).

The emergence of synthetic pesticide use in the field of agriculture itself later became a paradigm due to the undeniable need for pesticides after World War II. Data shows that in the 1951-1960 decade in the United States, 34% of agricultural production was lost/damaged due to pest attacks. The total losses caused by plant-damaging organism attacks in 1970 were estimated to be around 11.1 billion US dollars, with a breakdown of 5.5 billion US dollars from pest attacks, 400 million US dollars from nematode attacks, 2.7 billion US dollars from plant disease attacks, and 2.5 billion US dollars from weed infestations (Brown, 1998: 10).

From the facts found in the field, it can be known that the economic factor plays a crucial role in driving the need for synthetic pesticides in the field of agriculture, particularly in the control of pests and plant diseases. This need then led to the theory that synthetic chemicals could be effectively used for pest and plant disease control, which eventually became a paradigm that dominated normal science in the field of agriculture.

This paradigm was embraced by scientists and practitioners in the field of agriculture worldwide at that time. As Ziauddin Sardar stated about Western science, this paradigm then displaced theories that did not align with the existing paradigm of pest and plant disease control at that time. As Rachel Carson revealed, many studies on the dangers of pesticides during that time were disregarded by the scientific community. (Carson, 1990: 10). If we refer to Thomas Kuhn's theory, these negative impacts can be considered anomalies in the field of agriculture.

Neglecting these anomalies does not automatically dismiss the theory. These anomalies then drive more and more research aiming to prove the environmental impacts. The peak of these anomalies was when Rachel Carson wrote the book Silent Spring, which significantly brought these anomalies to the surface, causing a crisis in the field of agriculture and other fields that also use synthetic chemicals to control certain organisms, such as in the field of health, where they are used to eradicate mosquitoes and other disease-causing insects.

This crisis then led to a scientific revolution in the field of agriculture, giving birth to a new paradigm known as integrated pest management. This had a significant impact on food policies worldwide. In Indonesia, this policy change only occurred at the end of the New Order era, specifically during the Pelita III era. The government established integrated pest management as the basic policy for every plant protection activity. The legal basis for the implementation of integrated pest management in Indonesia is based on Presidential Instruction No. 3 of 1986 and Law No. 12 of 1992 concerning plant cultivation systems (Untung, 1993: 17).

Scientific revolution has indeed occurred in the field of agricultural science, but it doesn't stop there. This crisis and scientific revolution have created an anomaly in Western science in general, which has dominated the development of knowledge in the modern era, including in the field of agricultural science. The paradigm of pest control with synthetic pesticides is one of the paradigms that resulted from the scientific process of scientists who adhere to the Western scientific paradigm. This condition can be depicted through the Venn diagram below:

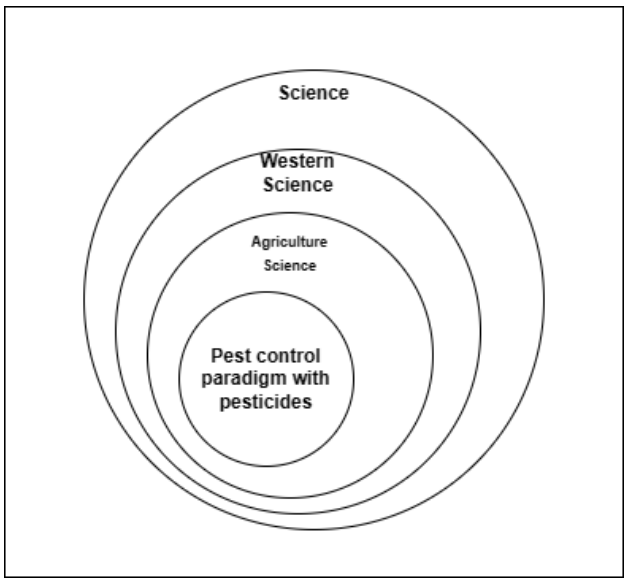

Figure 1. Posisi Paradigma pengendalian hama dengan pestisida dalam ilmu

In the diagram, the paradigm of pest control with synthetic pesticides is considered part of the set of agricultural sciences. Agricultural science itself then becomes part of Western science. Western science itself is one of the paradigms and parts of the set of sciences in general. This is the condition that occurs in the modern era, where all fields of knowledge are part of Western science. The branches of science themselves are the result of the Western scientific paradigm.

The anomalies and paradigm crises in one of the branches of science are the effects of paradigm errors previously proposed by Sonny Keraf. These paradigm errors are anomalies that have long been ignored by scientists working for the Western scientific paradigm. Just like the anomalies in agricultural science, anomalies in Western science then surface due to the presence of crises and scientific revolutions in one of the branches of science formed by the Western scientific paradigm. These anomalies then develop in such a way that they can become a crisis for Western science, where Eastern scientists over time begin to seek alternative paradigms to the Western scientific paradigm.

From what happened in the above case, it can be known that there is a connection between the anomalies and crises that occur in one branch of science in Western science with the Western scientific paradigm. In order for Islamic science to be accepted as a replacement paradigm for the Western scientific paradigm, it needs to first resolve the crisis that occurs in one branch of Western science by bringing the core values of the Islamic scientific paradigm.

Ziauddin Sardar, with his concept of Islamic science, becomes part of the anomaly by criticizing some gaps that occur in Western science. If environmental figures highlight the environmental impacts as one of the anomalies and some philosophy of science figures tend to criticize the concept of value-free Western science, Ziauddin Sardar in this case combines both by adding other aspects related to the universality of knowledge and development.

Islamic science as a paradigm offers a different approach compared to Western science. If Western science focuses on breaking down complex problems into smaller parts that are then solved with specific knowledge, the Islamic science offered by Sardar requires the integration of knowledge to solve complex problems.

The approach will distinguish how both scientific paradigms deal with different scientific opinions. Western science tends to reject views that are not based on the same scientific method. This is different compared to Islamic science, which not only considers opinions from other branches of knowledge but also views from systems of knowledge outside of scientific knowledge. The different approaches will then distinguish how these two scientific paradigms handle different opinions from different branches of knowledge. Western science tends to reject views that are not based on the same scientific method. This is different compared to Islamic science, which not only takes into account opinions from other branches of knowledge but also views from knowledge systems outside of scientific knowledge.

4. Conclusion

The Ziauddin Sardar proposes the concept of Islamic science as a critique of the Islamization of knowledge, which is essentially a response to the influence of the universality of knowledge put forward by the West. Islamic science itself can be seen as a paradigm, where scientists work within an ethical framework, which in this case is the Quran. The characteristic that distinguishes this paradigm from the Western scientific paradigm lies in its attachment to values, the integration of different fields of knowledge, and how it deals with theories and knowledge from outside the dominant scientific paradigm. In other words, Islamic science accommodates local knowledge rooted in the local culture, enabling it to adapt to the local environment.

Islamic science is a comprehensive paradigm, similar to Western science, that can serve as a framework for scientists from various fields of knowledge. The Islamic paradigm attempts to critique the concept of universality, which has been one of the values embraced by the Western scientific paradigm. This concept has been one of the reasons why scientific revolutions have occurred slowly. This has led scientists to be less sensitive to the environmental impacts of scientific developments. The value of universality tends to perpetuate branch paradigms that work for the Western scientific paradigm, which in the modern era has overly separated economic interests from ecological aspects. This crisis is then addressed by Ziauddin Sardar's Islamic science, which tends to be more open by shedding the value of universality and adjusting knowledge according to local cultural roots.

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