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Analyzing the Phenomenon of Decoupling and Disengagement between the West and China Based on Kuhn's View of Incommensurability

Tan Lingfeng[1], Tong Wanting[1]

[1]School of Entrepreneurship and Innovation, Shenzhen Polytechnic University, Shenzhen, Guangdong, 518055, China

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Abstract: In the process of globalization, international connections are becoming increasingly close, and international cooperation in science should have strengthened accordingly. However, a phenomenon of decoupling and broken chains has emerged in scientific and technological cooperation between Western countries and China, which runs counter to the trend of globalization. Given the large team of Chinese scientists and strong economic power, the international community generally expects close cooperation between the West and China in science and technology. However, differences in values have led to difficulties in cooperation, and the emergence of this phenomenon has attracted great attention from academia and policymakers. Using literature review and case analysis methods, this paper first reviews the development trend of scientific and technological cooperation in the context of globalization and then deeply analyzes the current situation and challenges faced by Western countries and China in scientific and technological cooperation. In particular, this paper uses Kuhn's incommensurability perspective as a theoretical framework to explore how differences in values can become barriers to scientific and technological cooperation. The study found that despite globalization promoting international exchanges and cooperation, the phenomenon of decoupling and broken chains still exists in the field of science and technology between the West and China. Kuhn's perspective of incommensurability provides a powerful analytical tool, revealing the impact of value differences in scientific and technological cooperation. Through case studies, this article further illustrates how differences in values can lead to misunderstandings and conflicts in scientific and technological cooperation. Although globalization provides great opportunities and possibilities for international scientific and technological cooperation, differences in values have somewhat restricted cooperation between the West and China. By deeply analyzing and understanding this phenomenon, we can better find solutions and promote international cooperation in the field of science and technology.

1. Kuhn's View on Incommensurability

Regarding paradigms, Kuhn believes that "a paradigm is a scientific achievement recognized by most people, and these achievements provide models and solutions for solving the problems of the scientific community." [1]In the book "Reconstructing Kuhn's Philosophical Views: Incommensurability Without Relativism", a new paradigm theory is proposed, which emphasizes the importance of avoiding relativism but also suggests that Kuhn's original paradigm theory may have a certain degree of relativity[2]. In "The Structure of Scientific Revolutions"[3], there is a very important concept known as "incommensurability". Kuhn's paradigm incommensurability is seen by many scholars as an irrational scientific theory [4]. It covers three aspects: inconsistency in concepts, terminology, and references; differences between old and new paradigms, that is, there is overlap in terminology and references, but their essential connotations cannot be understood in traditional ways. With the advent of a scientific revolution, new standards and logic emerge, thus changing the problems to be solved. The impact of this change is not only reflected in standards but also in the world view, changing from the original duck to a rabbit. This change leads scientists and policymakers to re-examine and understand the world. Kuhn believes that there is "incommensurability" between different paradigms, which means that two paradigms cannot fully dialogue because they differ in commitments, paradigms, values, etc., leading to fundamental disagreements. Kuhn believes that despite differences between paradigms, it does not mean there is no possibility of communication between them. Different communities can persuade each other to accept their views and abandon their original ones through persuasion. This "incommensurability" seems to explain well the relationship between communities of different paradigms. However, there are some dilemmas inherent in this concept itself.

According to Kuhn's viewpoint, different paradigms can only persuade each other to abandon their own paradigms and accept the other's paradigm through persuasion. This implies that a community can only be built on the foundation of one paradigm. However, Kuhn himself acknowledges the existence of situations where "different communities share several common major paradigms". This suggests that a community can embrace multiple distinct paradigms, and different communities may reach consensus on some paradigms while differing on others. Due to incommensurability, the disparities between the new and old paradigms cannot be clearly defined. In other words, there is no reliable logical connection between two distinct paradigms, making it challenging for policymakers and participants to make informed choices. Firstly, policymakers and participants lack a unified standard to evaluate the merits of paradigms. Different paradigms are judged based on their respective criteria. Paradigm A may be superior to Paradigm B under a certain standard, but the situation might be different when using Paradigm B's criteria.

2. Paradigmatic Differences between the Western and Chinese Models

An important philosophical concept proposed by Kuhn and Feyerabend suggests a clear distinction between old and new paradigms, that is, different paradigms lead to significant differences in the connotations of scientific terms, concepts, experiments, and their interrelationships, and the supporters of these paradigms also have completely different worldviews [5]. However, the dilemma of incommensurability lies in the lack of a recognized standard to measure the superiority or inferiority of different paradigms. This also means that the process of scientific paradigm selection is often subjective and controversial. Nevertheless, some scholars believe that in the process of scientific development, a pattern is followed: starting from learning by example, going through pre-paradigm science, then routine scientific research [6], followed by revolution, and finally reaching incommensurability (communication blockage), and entering a new stage of routine science.

When discussing the phenomenon of decoupling and disconnection between Western and Chinese technology, the perspective of incommensurability of systems provides a useful viewpoint. First, based on Kuhn's incommensurability, we can analyze the paradigmatic differences between Western and Chinese governance models. In the West, democracy and individual rights are the main values and paradigms. The Western political system emphasizes people's participation and free choice, safeguarding citizens' basic rights and freedoms. This paradigm emphasizes individualism, free market economy, and diversified political competition. In contrast, the Chinese governance model has a different paradigm. China emphasizes collectivism, national authority, and social stability. China's governance model is based on the socialist system led by the Communist Party, focusing on social equity, stability, and development. China's paradigm emphasizes national interests and collective consciousness, emphasizing centralized power and collective decision-making.

These two different paradigms have created significant differences in political systems and political culture. In the West, democracy and individual rights are regarded as inviolable values, and the government's power is restricted and supervised. In China, however, national authority and social stability are seen as important values, with government power centralized in the central government to ensure social order and unified decision-making.

This paradigmatic difference leads to incommensurability between the two political systems. Essentially, there are differences in the basic principles and values of Western and Chinese governance models, making it difficult to reach a consensus through dialogue and communication. Although there are some common main paradigms between the two sides, such as economic development and social stability, differences in other paradigms lead to incommensurability between the two systems.

This incommensurability means that it is difficult for Western and Chinese governance models to understand and accept each other's viewpoints. Each country judges and interprets political actions according to its own paradigm, leading to difficulties in dialogue. However, despite the incommensurability, exchanges and interactions between Western and Chinese governance models can still be achieved through diplomacy and economic cooperation, which can promote mutual understanding and reduce conflicts.

3. The differential institutional paradigms underlie the disengagement and decoupling

Observed in certain sectors between the West and China. Disengagement refers to a gradual reduction or even interruption of economic, technological, and cultural exchanges and cooperation between Western countries and China. According to Thomas Kuhn's theory on scientific revolutions, paradigm shifts are crucial, where competing new and old theories coexist in a "pre-paradigmatic" phase[7], during which the difficulties in communication between paradigms presage a scientific revolution, highlighting their incommensurability (Kuhn, 1962). This incommensurability stems from differences in paradigms and values. In the context of the West and China, while there are shared paradigms like economic growth and social stability, disparities in other paradigms create incommensurability. The West prioritizes democracy and individual rights, while China emphasizes collectivism and state authority.

These differing paradigms lead to significant divergences in politics, economics, and culture, fostering incommensurability. Western nations may view China's governance model as at odds with their values, raising concerns about human rights or political systems. Conversely, China perceives Western interference or criticism as threats to its national stability and sovereignty.

Two additional factors contribute to the disengagement: intensified competition and redefined national interests. Heightened competition prompts each side to focus more on self-interest and

security, lessening tolerance for policies and actions that do not align with their paradigms. As national interests evolve, each party prioritizes domestic agendas, further weakening the incentive for collaboration.

Disengagement extends beyond the economic realm, encompassing technology and culture, as exemplified by the US-China disputes over 5G, intellectual property, and semiconductor technologies. These disagreements stem from fundamental differences in paradigms and interests, amplifying incommensurability and driving disengagement.

Nonetheless, despite this trend, opportunities for engagement and cooperation persist. Diplomatic dialogue and communication through channels like international conferences and negotiations can help ease tensions and misunderstandings. International organizations and multilateral frameworks also play a critical role by providing platforms for understanding and collaboration, thereby mitigating the impact of incommensurability.

In summary, the distinct institutional paradigms, intensified competition, and redefined national interests contribute to the disengagement between the West and China, manifesting in various sectors. While challenges persist, diplomatic efforts and international cooperation remain essential for maintaining communication and fostering a more balanced relationship.

4. The Importance of Paradigm Shift

Kuhn's concept of incommensurability emphasizes the significance of paradigm shifts in the development of science. Kuhn argued that "objective" paradigm shifts are incomplete, hence he proposed an incommensurability thesis, which posits that two lines of thought can be considered correct while another is wrong, indicating the existence of a common standard to measure them, but Kuhn rejected this notion [8]. When a paradigm fails in the face of new observational results or research questions, policymakers and their think tanks need to seek a new paradigm to replace the old one. A paradigm shift is not just a change in theory and methodology; it is also a transformation in cognition and way of thinking. In the phenomenon of decoupling and disconnection between Western and Chinese science, a paradigm shift is key to resolving the issue. A paradigm shift can help alleviate the decoupling phenomenon between the East and West, as it enables both sides to better understand and adapt to each other's paradigms and values. In the decoupling phenomenon between the East and West, there exists incommensurability, that is, a significant difference between the paradigms and values of both sides. This incommensurability often leads to misunderstandings, conflicts, and confrontations. A paradigm shift can help both sides transcend their own paradigms, understand and view issues from the other's perspective, and enhance mutual understanding and communication.

A paradigm shift includes two aspects: psychological shift and institutional shift. Psychological shift means that both sides must consciously accept and understand each other's paradigms and values, letting go of their own prejudices and preconceptions. By correcting and transforming one's own cognitive framework, one can view issues more objectively and comprehensively, thereby reducing misunderstandings and conflicts. Institutional shift refers to both sides changing institutions, policies, and rules to adapt to each other's paradigms and values. For example, Western and Chinese countries can seek institutional compromises and adjustments through dialogue and negotiation, find a middle ground that both can accept, and establish a framework and mechanism for mutual cooperation. In this way, both sides can better adapt to each other's paradigms and values institutionally, promoting cooperation and exchange.

Paradigm shifts can also promote complementarity and cooperation between the East and West. By recognizing and drawing on each other's strengths, a mutually beneficial and win-win cooperation model can be achieved. For instance, China's development model highlights

collectivism and the guiding role of the state, achieving significant accomplishments in some areas. When cooperating with China, Western countries can learn from China's experience to achieve common prosperity in a complementary manner.

In summary, paradigm shifts help alleviate the decoupling phenomenon between the East and West because they promote mutual understanding, reduce misunderstandings and conflicts, and provide a basis for establishing cooperative frameworks and mechanisms for both sides. By transforming their own cognitive frameworks and adapting to each other's paradigms and values, both sides can better coordinate interests and achieve win-win cooperation.

5. Conclusion

The phenomenon of decoupling and disconnection between the West and China is not merely a result of paradigm differences; it is also a reflection of history, culture, and values. Kuhn's perspective of incommensurability provides us with a beneficial framework for analyzing this phenomenon. Paradigm shift is seen as the key to resolving the decoupling and disconnection between the West and China. In their cooperation, an open mindset is required for paradigm shifting, and attempts should be made to combine theories and methods to achieve effective scientific collaboration. Moreover, understanding the history, culture, and values behind the development of science can also help us comprehend the decoupling and disconnection between the West and China more deeply. Only on the basis of diversity and inclusiveness can the West and China initiate new models of cooperation and jointly promote the development of society.

References

[1] Kuhn, T.S. (1996) The Structure of Scientific Revolutions. University of Chicago Press, Chicago.
[2] Malon M.E., Meng Qingshi. Reconstructing Kuhn's Philosophical View: Incommensurability without Relativism [J]. Translations of Philosophical Works, 1993(6): 10-19.
[3] Kuhn T.S. The Structure of Scientific Revolutions (4th Edition) [M]. Translated by Jin Wulun, Hu Xinhe. Beijing: Peking University Press, 2012.
[4] Tan Yanchao. Research on Kuhn's Paradigm Incommensurability [J]. Chinese and Foreign Corporate Cultures, 2020, (06): 103-104.
[5] Wang Dapeng. Two Cultures and Incommensurability [J]. Young Journalist, 2019(12): 111. DOI:10.15997/j. cnki.qnjz. 2019.12.059.
[6] Liu Lu. On the Relationship between Paradigmatic Incommensurability and Scientific Progress [J]. Science and Technology Entrepreneurship Monthly, 2013, 26(07): 1-3.
[7] Zeng Linghua, Yin Xinyu. The Meaning of "Paradigm"—A Textual Study of Kuhn's "The Structure of Scientific Revolutions" [J]. Journal of Wuhan University of Technology, 2019, 32(6): 72-77.
[8] Okasha S. Philosophy of Science: A Very Short Introduction (Chinese Edition) [M]. Translated by Han Guangzhong. Jiangsu: Yilin Press, 2013.