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**Philosophy of Science in China: Politicized, De-politicized, and Re-politicized**

Yuanlin Guo (0000-0001-8101-8875) and David Ludwig (0000-0002-2010-5120)

**Abstract**

Philosophy in China has been entangled with politics since the Qin Dynasty (221-206 BC). From 1949 until 1978, philosophy of science became established in China as an explicitly political program in the tradition of Friedrich Engels’ *Dialectics of Nature*. From 1978 until 2012, philosophy of science became increasingly independent from the *Dialectics of Nature* and framed as depoliticized in the context of “Reform and Opening-up” in China. A lot of Western philosophy of science was introduced to China in this phase. Since 2012, however, the Chinese Communist Party has increasingly repoliticized philosophy of science by insisting that it should be a Marxist branch of philosophy. We conclude that the case study of China illustrates the geographical heterogeneity of interactions between philosophy of science and politics that cannot be condensed into one general model of historical stages and requires more nuanced reflection about different kinds of (de)politicization of philosophy of science.

1. **Introduction**

Philosophy of science has become increasingly reflective about its historically changing political ambitions. The most common historical narrative moves from Austria to the United States by emphasizing the political activism of the Vienna Circle (Uebel 2010; Richardson 2009), the depoliticization of the field in the cold war period (Reisch 2005; Vaesen and Katzav 2019), and more recent trends towards re-politicization in areas such as feminist philosophy of science (Howard, 2009; Longino, 2006).

This chapter expands the narrow geographic focus of this history of philosophy of science by focusing on the developments in China that followed a very different historical path. Academia in China has been a handmaid of politics since the Qin Dynasty (221-206 BC). Prominent historian Zehua Liu (1935-2018) has argued that ancient Chinese society was centered around the political power of the king. “The king’s power dominated all aspects of the society, including the social resources, materials, and wealth. It also dominated agriculture, industry, commerce, culture, education, science, and technology, and the fate of every member of society. In a society ruled by the king’s power, all people and materials were to some extent at the disposal of political power. All theoretical or actual care for the people was only a means to political ends” (Liu 2015, p. 22).

In contemporary China, academia remains in the service of the central political power as every academic field has to be approved and given an identity through the government. Without such political approval, a field has no opportunities of enrolling students, setting up journals, receiving research funding, and so on. The emergence and development of philosophy of science in China is therefore closely entangled with its political position in relation to the government. This chapter focuses on these dynamics of politicization, de-politicization, and re-politicization that have characterized the field.

Few Chinese scholars studied philosophy of science before the second half of the 20th century. After 1949, the field became established as a part of Marxist philosophy with the goal of creating an intellectual bridge between dialectical materialism and the natural sciences. In this first phase from 1949 until 1978, Engels’ work on *Dialectics of Nature* constituted the main point of reference and remained almost entirely disconnected from non-Marxist debates in philosophy of science. Instead, *Dialectics of Nature* was widely employed and taught with the goal of bringing the natural sciences into the service of dialectical materialism and communist society.

From 1978 until 2012, philosophy of science became increasingly independent from the *Dialectics of Nature*. The so-called “Opening-up” meant that China would also incorporate intellectual traditions from the West. Under these circumstances, a lot of Western philosophy of science was introduced into China. For example, Schlick (1882-1936), Carnap (1891-1970), Popper (1902-1994), Kuhn (1922-1996), Feyerabend (1924-1994), Lakatos (1922-1974), Putnam (1926-2016) and van Fraassen (1941-) had a significant impact on Chinese philosophers of science during this period. However, Western philosophy of science did not easily integrate with *Dialectics of Nature*, which had also been thoroughly reworked for the purposes of Marxism in China. As a consequence, *Dialectics of Nature* was renamed *Philosophy of Science and Technology* in 1987. At this stage, philosophy of science in China was increasingly conceptualized as a de-politicized project of understanding the nature of scientific inquiry that contrasted with the overtly political ambitions of *Dialectics of Nature*. De-politicization was embraced by Chinese philosophers of science as a strategy of creating autonomy from direct political demands.

However, the Chinese Communist Party again put greater emphasis on the political function of the field since 2012 when Jinping Xi (1953-) became the General Secretary of the Central Committee. At present, the Communist Party insists that Chinese philosophy of science should be a Marxist branch of philosophy, not a Western (non-Marxist) branch of philosophy.[[1]](#footnote-1) The current and future development of Chinese philosophy of science is therefore highly dependent on the wider political development within China.

1. **Politicized Philosophy of Science in China (1949-1978)**

Philosophy of science in China emerged from *Dialectics of Nature*, which aimed to bridge dialectical materialism and natural science for the purposes of communist society. All research in communist China is supposed to obey dialectical materialism. However, dialectical materialism is abstract and sciences are concrete. For this reason, it is necessary to create two bridges between dialectical materialism and sciences: one is *Dialectics of Nature*, which links natural science and technology with dialectical materialism; another is historical materialism, which links social science and humanities with dialectical materialism.

*Dialectics of Nature* is based on the unfinished manuscript with the same title (*Dialektik der Natur*) and *Anti-Dühring* by Friedrich Engels (1820-1895), *Materialism and Empirical Criticism* by Vladimir Lenin (1870-1924), and *the* *Mathematical Manuscript* by Karl Marx (1818-1883). During this period, *Dialectics of Nature* was further developed and refined in communist China. According to “the long-term plan for the development of science during the 12-year period from 1956 until 1967,” which the Chinese government published in 1956, *Dialectics of Nature* ought to deal with the following nine topics:

1. basic concepts in mathematics and natural science, and dialectical materialist

categories;

2. methodology of science;

3. kinds of motion and change in nature, and how to classify science;

4. historical development of ideas of mathematics and natural science;

5. criticizing idealism in mathematics and natural science;

6. philosophical problems in mathematics;

7. philosophical problems in physics, chemistry, astronomy, and earth science;

8. philosophical problems in biology and psychology;

9. natural science as social phenomena (Gong 1996, p. 21).

The nine topics were mainly concerned with the methodology of science and so-called view of science. Methodology of science aimed at providing scientists with guidance about scientific research methods. The view of science aimed to distinguish sciences of the proletariat from those of the bourgeoisie, to praise the former, to attack the latter, and to argue against idealism in science and for materialism in science. In this early phase, genetics, theory of relativity, and quantum mechanics were attacked as sciences of the bourgeoisie. Although research in *Dialectics of Nature* was largely interrupted because universities and institutes were closed during the Great Proletarian Cultural Revolution (1966-1976), attacks on supposedly bourgeois sciences continued and led to proposals such as the replacement of modern Western medicine as well as traditional Chinese medicine through a medicine of the proletariat.

Founding figures of modern philosophy of science like Tscha Hung (1909-1992) and Tianji Jiang (1915-2006) did not belong to the *Dialectics of Nature* circle but to the section of “foreign philosophy.” Hung, the only member of Vienna Circle from the East, received a doctoral degree under Moritz Schlick’s supervision. His works on logical empiricism have had a greater influence on Chinese philosophers since 1949. Jiang obtained a master’s degree in philosophy in North America. His book *Contemporary Western Philosophy of Science*, published in 1984 and republished later, has been a founding document of philosophy of science in China.

1. **Depoliticized Philosophy of Science in China (1978-2012)**

After Zedong Mao’s (1893-1976) death, the Chinese government, led by Xiaoping Deng (1904-1997), implemented the “reform and opening-up” policy in 1978. The so-called “opening-up” meant that Chinese academia also became increasingly engaged with international scientific debates. Under these circumstances, *Dialectics of Nature* began to introduce and incorporate contemporary Western debates and ideas.

The dramatic changes in this phase can be illustrated by contrasting three textbooks on *Dialectics of Nature*, compiled under supervision of the Chinese government. The first textbook (The Compilation Group, 1979) consists of View of Nature, View of Science, and Methodology of Science (i.e. philosophy of nature and philosophy of science). View of Technology and Methodology of Technology (i.e. philosophy of technology) were added to the second one (State Education Commission, 1991). The third one (Ministry of Education, 2004) further absorbed Science and Technology Studies (STS). *Dialectics of Nature* greatly expanded and developed, and assimilated philosophy of technology, sociology of science, history of science and technology, “science, technology and society,” science and technology studies, and philosophy of science.[[2]](#footnote-2) With respect to Western philosophy of science, works by Schlick, Carnap, Popper, Kuhn, Feyerabend, Laktos, Putnam, van Fraassen and others were translated into Chinese and researched. Popper’s falsificationism, Kuhn’s paradigm shifts, and Feyerabend’s methodological anarchism were popular in Chinese universities in the 1980s and 1990s.

*Dialectics of Nature* became increasingly broader and deeper during the period, going beyond Marxism. Consequently, *Dialectics of Nature* as a branch of philosophy was renamed *Philosophy of Science and Technology* (*Dialectics of Nature*) by the Chinese government to connect with international academic research. Initially, they were both regarded as one and the same branch although *Dialectics of Nature* was deleted in 1997. In fact, *Philosophy of Science and Technology* was not an accurate name because it excluded philosophy, as well as branches of historical and sociological studies of science. Furthermore, Chinese researchers often prefer application-oriented research to fundamental research because of an intellectual and political prioritization of the societal impact of science. For this reason, philosophical research on science and technology was less emphasized than research on policy, strategy and management of science and technology in the field of *Philosophy of Science and Technology* (Chen and Xu 2005).

*Dialectics of Nature* and Chinese philosophy of science gradually began to blend with international philosophy of science and wider science studies. In 1987, the Chinese Society of Dialectics of Nature joined The Division of Logic, Methodology and Philosophy of Science, which belongs to The International Union of History and Philosophy of Science. An international conference on philosophy of science, devoted to the topic “Realism and Anti-Realism in the Philosophy of Science,” took place in Beijing in 1992. The collection of articles from the conference, as part of the Boston Studies in the Philosophy of Science book series (BSPS, volume 169), was published in English (Cohen, Hilpinen & Qiu, 1996). An anthology of excellent Chinese articles about history and philosophy of science and technology was translated into English and published in 1996 (Fan and Cohen, 1996). In 2007, Tsinghua University (in Beijing) held the Thirteenth International Congress of Logic, Methodology and Philosophy of Science.

During this period, Western general philosophy of science, philosophy of quantum mechanics, philosophy of system sciences, philosophy of life sciences, ethics of science, philosophy of cognitive sciences, philosophy of information, scientific realism and anti-realism, scientism and humanism, postmodernist philosophy of science, science and values, philosophy of social sciences, and epistemology of science were among the important research fields in philosophy of science in China. Furthermore, Wang (2004) compiled an outstanding textbook *Studies in Philosophy of Science* on the basis of this research.

To characterize the second phase in terms of “de-politicization” is not to say that Chinese philosophy of science was free of normative motivations or implications. Indeed, many of the imported philosophers of science from Carnap to Popper to Feyerabend had well-known political agendas of their own. Instead, de-politicization was employed as a strategic frame that produced greater intellectual independence from *Dialectics of Nature* and thereby opened-up connections with international philosophy of science. It is precisely this greater intellectual distance from *Dialectics of Nature* and from the political program of the Chinese Communist Party that has more recently led to a collapse of the second phase in an era of re-politicized philosophy of science under increasing government control.

1. **Repoliticized Philosophy of Science in China (2012-the present)**

According to the Chinese Communist Party, socialism with Chinese characteristics has entered a new era since 2012. In this new era, the Communist Party exercised leadership over all areas of academia and the party also began to exercise tighter control and guidance over *Dialectics of Nature* and philosophy of science. In contrast to earlier appeals for de-politicization, Chinese philosophy of science responded by increasingly emphasizing its political function.

In 2012 the Chinese government reduced “Introduction to Dialectics of Nature,” a course for all Master’s degree students in fields of natural science and technology since 1981, from three credit-hours (54 class-hours) to one credit-hour (18 class-hours). This decision challenged Chinese philosophy of science and *Dialectics of Nature* because the course provided most teaching jobs for scholars in the field. For example, in 2018, Tsinghua University dissolved its Institute for Science, Technology and Society because of the adjustment in this course. The Teaching and Research Section in *Dialectics of Nature*, founded in 1978, and the Research Section in Science, Technology and Society, established in 1985, were formed incorporated into this institute in 1993. It was one of the most important research and teaching institutions in fields of *Dialectics of Nature* and philosophy of science from 1978 until 2018.

Under political and ideological pressure, *Dialectics of Nature* has been at pains to emphasize its political function. *A Syllabus for Introduction to Dialectics of Nature*, compiled and published under supervision of the Chinese government in 2012, insists that *Dialectics of Nature* is not a branch of philosophy, but a branch of Marxist Theory—different from Philosophy of Science and Technology (The Compilation Group 2012, p. 1).[[3]](#footnote-3) In contrast to the previous *Dialectics of Nature* textbooks, it made three major changes. First, the titles of chapters were transformed from View of Nature, View of Science and Technology, Methodology of Science and Technology, etc., into *Marxist* View of Nature, *Marxist* View of Science and Technology, *Marxist* Methodology of Science and Technology, and so on. Second, for Marxist View of Science and Technology in China, views of Zedong Mao, Xiaoping Deng, Zemin Jiang (1926-) and Jintao Hu (1942-) were added. In particular, Xi’s view of science and technology was further elaborated and became the most important part of Marxist View of Science and Technology in China in the 2018 version (The Compilation Group 2018). Thirdly, it enlarged the quotations from Marx, Engels, Lenin and Stalin (1879-1953). In sum, *Dialectics of Nature* claimed a re-politicized identity to prove its relevance in the new area of socialism with Chinese characteristics.

In this political and ideological situation, Chinese philosophy of science has been restructured under a novel political agenda. First, it returned to dialectical materialism and in particular the philosophy of Marx, Engels and Lenin. Accordingly, the Chinese government insists that Chinese philosophy of science must be clearly distinguished and critical of non-Marxist and Western traditions of philosophy of science. This requirement is enforced through tight control and censorship of publications. In the undergraduate and graduate teaching of philosophy of science, for example, professors must use the textbooks that have been compiled and published under supervision of the Chinese government.

Second, Chinese philosophy of science must conform to Marxism and additionally reflect its Chinese characteristics. In 2016, president Xi pointed out that China should have confidence in its culture, in addition to confidence in its path, guiding theories, and political system. The so-called “confidence in China’s culture” means that China should attach more importance to Chinese culture, especially Chinese traditional culture, so the country embraces its distinctness from other—and particularly—Western nations. Under these cultural circumstances, some scholars emphasize that more importance should be given to Chinese philosophers of science. Other scholars focus on practical philosophy of science, which includes traditional Chinese medicine, and other indigenous knowledge from China.

Finally, this push towards a distinctly Chinese and explicitly-politicized philosophy of science also creates tensions with other dynamics in Chinese academia. For example, top-ranking Chinese universities have increasingly hired Western academics, including philosophers of science, as part of their wider “Recruitment Program of Global Experts” (Kim, 2017). While Chinese philosophy of science has looked inwards to prove its political value to the Chinese Community Party, Chinese academia also looks outwards to establish international leadership and attract foreign expertise. Indicating another possible step in the circle of politicization and de-politicization, philosophy of science and technology are often better suited to fit into such international recruitment programs than other areas of Western philosophy (e.g. ethics, political philosophy, history of philosophy) that are more explicitly tied non-Marxist political traditions.

To sum up, Chinese philosophy of science has returned to the *Dialectics of Nature* derived from Marx, Engels and Lenin as well as put increased emphasis on the Chinese characteristics of scientific practices. Both developments reflect another shift in the political positioning of philosophy of science. While depoliticization was widely embraced in the second phase (1978-2012) to position the field in greater independence from political control, re-politicization has become the dominant framework to prove relevance and usefulness of philosophy of science in the new era of socialism-with-Chinese-characteristics. At the same time, this trend has created currently unresolved tensions with simultaneous attempts to establish international leadership and to recruit foreign expertise in Chinese academia.

1. **Conclusion**

We have drawn a historiographic and a systematic conclusion from our engagement with philosophy of science in China. Historiographically, processes of de-politicization cannot be subsumed under one global narrative of the history of philosophy of science. In the same time period in which philosophy of science in the USA became increasingly depoliticized, it took its most overtly political form as *Dialectics of Nature* in China. By the time that feminist and other political projects challenged the de-politicized character of North American philosophy of science, Chinese philosophers insisted on de-politicization as a strategy of creating independence from the political control and opening-up debates towards international scholarship. More recent developments of re-politicization are driven by the strategic concerns of the Chinese Communist Party and are largely independent of simultaneous debates about “science and society” in Europe and North America.

Our study shows that a simple distinction between politicization and de-politicization is of insufficient analytic granularity to engage with societal concerns in philosophy of science. In China, questions about de-politicization are closely connected with the role of the Chinese Communist Party in shaping the agendas of philosophical research. While related concerns have a long tradition in Western philosophy through the idea of “freedom of science” (Kant 1789; Wilholt, 2012), current debates about “science and society” as well as “science and values” in the English-speaking literature often embrace politicization as a strategy for diversifying societal influence on scientific practice (Howard 2009; Fehr and Plaisance 2010). Understanding these diverging developments requires a more careful engagement with different kinds of politicization that are at stake in current debates about the politics of philosophy of science.

Finally, the politicization, de-politicization and re-politicization of philosophy of science in China, is not an independent development of this branch. Politics has dominated academia and daily life since the Qin Dynasty to the current focus on the agenda of the Chinese Communist Party. The current imperative of re-politicization limits both the intellectual originality and international visibility of Chinese philosophy of science. Given that this development creates tensions with the ambition to establish international leadership of Chinese academia, the future development of Chinese philosophy of science remains closely entangled with the wider and uncertain political dynamics.

**References**

Chen, R., & Xu, W. (2005). Statistical analysis of dissertations for academic degrees in philosophy of science and technology in China. *Studies in Dialectics of Nature*, 21(7), 94–99.

Cohen, R., Hilpinen, R., & Qiu, R. (1996). *Realism and Anti-Realism in the Philosophy of Science: Beijing International Conference, 1992.* Kluwer Academic Publishers.

Fan, D., & Cohen, R. (ed.) (1996). *Chinese Studies in the History and Philosophy of Science and Technology*. Trans. Kathleen Dugan and Mingshan Jiang. Kluwer Academic Publishers.

Fehr, C., & Plaisance, K. S. (2010). Socially relevant philosophy of science: an introduction. *Synthese*, 177(3), 301–316.

Gong, Y. (1996). *Dialectics of nature in China*. Beijing University Press.

Guo, Y. (2014). The Philosophy of Science and Technology in China: Political and Ideological Influences. *Science & Education* 23(9), 1835–1844.

Howard, D. (2009). Better red than dead—putting an end to the social irrelevance of postwar philosophy of science. *Science & Education*, 18(2), 199–220.

Jiang, T. (1984). *Contemporary Western Philosophy of Science*. Chinese Social Science Press.

Kant, I. (1798). *Der Streit der Fakultäten*. Nicolovius.

Kim, H. (2017). The Higher Education Policy of Global Experts Recruitment Program: Focused on China. *Bulgarian Comparative Education Society*. <https://eric.ed.gov/?id=ED574216>

Liu, Z. (2015). The King’s Power Dominating Society—A Re-examination of Ancient Chinese Society. Trans. Jingqiong Wang and Josh Mason. *Journal of Chinese Humanities*, (1), 4–24.

Longino, H. E. (2006). Philosophy of science after the social turn. In Galavotti M.C., ed. Cambridge and Vienna. Vienna Circle Institute Yearbook [2004], vol.12. Springer, 167–177.

The Ministry of Education. (2004). *Conspectus of dialectics of nature*. Higher Education Press.

Reisch, G. A. (2005). *How the Cold War transformed philosophy of science: To the icy slopes of logic*. Cambridge University Press.

Richardson, S. S. (2009). The left Vienna circle, part 1. Carnap, Neurath, and the left Vienna circle thesis. *Studies in History and Philosophy of Science Part A*, 40(1), 14–24.

The Compilation Group (1979). *A textbook of dialectics of nature*. People’s Education Press.

The Compilation Group (2012). *A Syllabus for dialectics of nature*. Higher Education Press.

The Compilation Group (2018). *A Syllabus for dialectics of nature* (revision). Higher Education Press.

The State Education Commission (1991). *Conspectus of dialectics of nature* (revised edition). Higher Education Press.

Uebel, T. (2010). What’s right about Carnap, Neurath and the Left Vienna Circle thesis: a refutation. *Studies in History and Philosophy of Science Part A*, 41(2), 214–221.

Vaesen, K. & Katzav, J. (2019). The National Science Foundation and philosophy of science's withdrawal from social concerns. *Studies in History and Philosophy of Science Part A*., 73–82

Wang, W. (2004). *Studies in Philosophy of Science*. Tsinghua University Press.

Wilholt, T. (2012). *Die Freiheit der Forschung: Begründungen und Begrenzungen*. Suhrkamp Verlag.

1. In China, Western philosophy is used to refer to non-Marxist philosophy in the West although Marxist philosophy originated from the West and partly belongs to Western philosophy. [↑](#footnote-ref-1)
2. For more details, see Guo (2014). [↑](#footnote-ref-2)
3. Nowadays in China, philosophy consists of eight branches: Western philosophy, philosophy of science and technology (philosophy of science included), Marxist philosophy, ethics, studies in religion, logic, traditional Chinese philosophy, and aesthetics. In 2005, the Chinese government created a new subject “Marxist theory”, which consists of six branches: basic Marxist principles, foreign Marxism, history of Marxism, Marxism in China, ideological and political education, and studies in basic problems of modern Chinese history. Although “Introduction to Dialectics of Nature” is still an ideological course for master’s degree students, Dialectics of Nature is neither a branch of philosophy, nor a branch of Marxist theory due to its depoliticization. [↑](#footnote-ref-3)