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Differences in East Asian STS: European Origin or American Origin?

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More than five years have passed since we started East Asian STS activity. It is growing more rapidly than we expected. The number of STS'ers joining in is increasing rapidly. East Asian conferences provide important meeting places for exchanging our regional experiences from and with each community. At last, the *East Asian STS* journal is coming into being, thanks to the enthusiastic commitment of the Taiwan STS community.

Though the future of East Asian STS seems to be bright, we have, of course, our difficulties. The biggest seem to me to be the differences in the orientation of research interests, which could lead to deep antagonism. It is true that differences are a stimulus to productivity. However, to make use of them, we need to know what *are* the real differences among us. The purpose of this presentation is to identify them. First, I will describe a short history of Japanese STS. And at the end of the paper, I will briefly compare it with STS in East Asia.

In my presentation, I will divide the history of Japanese STS into four stages. But first, I would ask East Asian colleagues to consider my comments below on a characteristic of the Japanese modernization process since the Meiji Restoration (1868): modernization under the strong influence of the European countries. For example, Japanese engineering infrastructure including railway & road transport system was designed, or even constructed, by British engineers. The Navy also learned much from Britain, and we bought battleships from there.

But the Meiji leaders were careful not to introduce the British legal system, which was 'unnecessarily' democratic. They showed the 'wisdom' of implementing German law. Indeed, not only law but also the Japanese academic setting in general was designed following the German one, reflecting the backwardness of the society. So, for example, the German philosophical trends of Kant, Hegel, neo-Kantians and even Marx were, or still are, dominating in the academic sphere in Japan.

If we look at the history of Japanese STS, German influence was conspicuous from the beginning. Japanese STS started as science studies (科学論) at the first

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stage, and liberals and Marxists were active in the field. For example, Jun Tosaka (戸坂潤), who started his research as a Neo-Kantian, converted to Marxism, and published his book *Science Studies* (『科学概論』) in 1935. He was one of the organizers of the Materialism Research Society (唯物論研究会, 1932). Jun Isiwara (石原純), the liberal physicist who hosted Einstein's visit to Japan in 1922, was a member of the Society. Science studies were a hiding place for liberal or left wing thinkers under Japanese fascism. History of science played a similar role, but it came rather later, as the Japanese Society for History of Science (日本科学史学会) was inaugurated only in 1941.

The second stage of Japanese STS started in 1945, when the Japanese Empire collapsed. Science was a tool for democratizing Japan against old-fashioned prewar ideology. Liberals and Marxists, who were forced to hide underground during the repressive military regime, started their movements openly in public. They organized the Society of Democratic Scientists (民主主義科学者協会), including researchers in the humanities and social sciences. Physicists played an important role in the movement as in the case of Mitsuo Taketani (武谷三男).[1] His books on science studies attracted wide audiences. He was a leading figure in the anti A-bomb movement. It is worth mentioning that books written by British scientists also had a strong influence on the democratization process. For example, J. D. Bernal's *The Social Function of Science*, an important work of sociology of science, was translated by Sakata (坂田昌一), a communist physicist, in 1951. The books of Joseph Needham, L. T. Hogben, etc. were also introduced. Again, Japan was influenced by Europe (though in this case mainly by the UK).

However, the democratization process got stuck when the Cold War began in about 1950. American occupation policy changed, and liberal arguments became increasingly difficult.[2] The Society of Democratic Scientists got weaker and weaker, and ideological confusion emerged. In this setting, the Americanization of research began. History of science was an important instrument of Americanization, and this characterizes the third stage of Japanese STS. The Department of History and Philosophy of Science (HPS) of the University of Tokyo was established in 1951 together with departments of anthropology, international relations, regional studies, etc., and other American-type disciplines. History of science was regarded as being less harmful to society than science studies, because researchers need not mention society, just as in the case of Koyré's history (history of ideas). Indeed, in the 1970s, when I joined HPS, it was dangerous in some instances to mention 'science and society' at HPS, because the word 'society' was a reminder of Marxist orientation.

But almost at the same time, another aspect of Americanism arrived in Japan, when Kuhn's *Structure of the Scientific Revolutions* was translated into the Japanese language in 1971 by Shigeru Nakayama (中山茂). During the 1960s, environmental pollution was a serous problem in Japan as a result of rapid economic growth. The public needed some instrument to criticize contemporary science-based industry with (especially chemical firms). Kuhn's theory of paradigm was welcomed as an antidote

[1]He spent his boyhood in colonial Taiwan, and was a student at Taipei High School (台北高等学校).

[2]In post-war Japan, the US had two faces. In the first stage, the US liberated Japan. But after the founding of the 'Red China' and the Korean War, the US began to support Japanese conservatives. Quite a few of the latter had been active in the fascist government before the War.

to scientism. However, it is worth noting that his theory was welcomed mainly by 'new left' (新左翼) scholars. Traditional German-type thinkers, including orthodox Marxists, were or are suspicious of it. Main line philosophers criticized paradigm theory as just another version of Kant, while Marxists regarded relativism as neglecting science's role in enlightenment and democratization. But, anyway, we were now allowed to mention scientific community, a 'social' aspect of science.

An important feature of Kuhn's theory was its focus on science as knowledge. It was common to Sociology of Scientific Knowledge (SSK) of the Edinburgh School that followed the Kuhnian framework in the UK. During the 1980s, when SSK had a strong influence on Japanese HPS and science studies, I (who was active in introducing SSK) observed an interesting phenomenon: researchers in history and philosophy of science, after Kuhnian dominance, no longer showed an interest in the contemporary social problems raised by science. For them, the meaning of 'society' was limited to the behavior of scientific communities for hegemony on paradigm. Science policies, decision-making about science, environmental studies, public understanding of science, and so on were outside their scope. STS'ers came to be (or still are) trained almost solely in SSK, SCOT (Social Construction of Technology), ANT (Actor Network Theory),[3] cultural studies of science, etc.—trends strongly affected by *sociology* and *anthropology*. They lost sight of politics, economics, innovation, risks, pollution and so on, i.e. 'actual' science[4] in society that used to be the research target of *science studies* that were the original form of STS in the West either. Steve Fuller (2000) summarized this phenomenon under the name of 'Kuhnification'.[5] In the long run, it constituted a way to Science Wars.

When the Cold War collapsed at the end of the 1980s, finally the time had come to remember 'science in society', which was at the heart of STS (or science studies) before the Cold War. It was the beginning of the fourth stage of STS activities in Japan. We were now liberated from the ideological conflicts that conditioned Cold War STS. In this context, when I myself organized STS Network Japan with colleagues, we first needed to rehabilitate our over-inclination to treat 'science as knowledge'.

In retrospect, it was achieved by the differentiation of European and American impacts on STS history. Both of them have advantages and disadvantages, and we have to make selective use of the former. The merit of European STS was (or often still is) their stronger concern for problems of science in everyday life. If we read textbooks of SISCON (Science in a Social Context), this orientation survived even

[3]It is often neglected that ANT (ironically) originated in the analysis of innovation processes. Indeed, ANT is now fashionable in innovation studies. As an early and representative example of ANT, see Callon (1980). Consider that Callon and Latour, two leaders of ANT, were at faculties of the Centre de Sociologie de L'Innovation (Center for Sociology of Innovation), École de Mine (School of Mining).

[4]My use of the term 'actual' is, of course, very different from its current use. I use the term in its traditional sense. I argue that this is much more useful in order to understand 'actuality' in society. Actuality should be 'real' in its Latin sense, which derives from 'res'.

[5]The term, coined by Steve Fuller (2000), is well developed in his book, *Thomas Kuhn: A Philosophical History for Our Times* (University of Chicago Press, 2000). During the Cold War period, political elements tended to be diluted or hidden. Otherwise, it would not have been possible to establish STS as an academic discipline. I myself remember Aant Elzinger, then the president of EASST, showed deep concern when Fuller (2000) emphasized the importance of SISCON at a session of the EASST annual meeting at Bielefeld, Germany in 1996. Leading STS'ers wanted to forget that STS (or science studies) had been formed to 'criticize' the abuse of science in the 1960s. For SISCON, see below.

through the 1970s (see, for example, Cameron and Edge (1979)). But the theoretical framework to analyze science did not appear in the UK. The advantage of the American impact is its role in neutralizing scientism with the theory of paradigm, though its scope is restricted to knowledge. This is the general conclusion we arrived at when we published *Science Studies at the Front* (『科学論の現在』) in 2002.

Thus, Japanese STS is now a mixture of European and American STSs. We use SSK, SCOT, ANT insofar as they are useful. But we are starting to recognize their disadvantages. When needed, we also take the liberty of consulting the frameworks of risk society, regulatory science, mode II, etc. Our target is shifting from scientific knowledge to science communication, scientific decision-making under uncertainty (e.g., GMO, BSE), participatory decision-making systems, science at the bar, environmental problems and their casualties, relevant governmental funding to science, proper innovation policies, etc.

How are STSs in other regions in East Asia? My observation is the following: They are under stronger influence, or almost sole dominance, by American STS. I am worried that flourishing research areas here of SSK, SCOT, Feminist and cultural studies of science are all American in origin (or American versions of the European tradition) including some flavor of French post-modernism as 'discourse' (or narrative) and as Foucault's claim of 'knowledge as power' (again knowledge!). If my observation is correct, don't our colleagues in East Asia need fresh sustenance from traditional European science studies (Bernal, Needham, Ziman, etc.), and from non-paradigmatic European philosophy (Wittgenstein, Popper, Marx, Habermas, Beck, etc.)? The newest trends from the US, like 'material culture' or 'thing knowledge', would also be useful, as they take a critical look at Kuhnification.

Finally, to sum up my argument, I would like to draw your attention to two STS handbooks published since the 1970s. Contemporary STS'ers should be familiar with the *Handbook of Science and Technology Studies*, edited by G. E. Markle et al. (Sage 1995). Modern trends in STS are crystallized in its contents. There was, however, another relevant handbook published in 1977 from Sage, the same publisher: *Science, Technology and Society—A Cross-Disciplinary Perspective*, edited by I. Spiegel-Rösing and Derek de Solla Price (1977). Its perspective included the analysis of science policy, science and economy, science, technology and the military, and science and developing countries. Of course, these topics are not totally missing in the new handbook. But if you compare the two handbooks, you find the differences implied in the meaning of STS. For the new handbook, the last 'S' is for 'Studies', while for the older book it was for 'Society'. STS was not an established academic discipline in the 1970s, but was an ambitious field for cross-disciplinary collaboration that is often called science studies. It seems to me that the interest in the actuality of science in society has been weakened during the last 20–30 years in the Anglo-American context, and the meaning of the term 'society' was narrowed to the scope that sociology (or in some cases, anthropology) allows.[6] It was one of

[6]Of course, I understand the difference of meaning of 'sociology' from society to society. In the main part of East Asia, sociology implies social analysis to improve the society. But in its history, sociology was to make social sciences more scientific (cf. Auguste Comte). In some cases, it served to neutralize the social sciences, and make them less harmful. My concern is, in rapidly developing areas, that the role of sociology should retrieve its original implication.

the main points of criticism that Ian Hacking (1999) encapsulated in the witty title of his book: *The Social Construction of What?*.

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