

## Introduction (1): Japanese STS in Global, East Asian, and Local Contexts

Togo Tsukahara

Received: 18 October 2009 / Accepted: 18 October 2009 / Published online: 15 November 2009  
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In March 2009, I had the opportunity to participate in the workshop “Toward a Trans-Asian Science & Technology Studies” (STS),<sup>1</sup> jointly organized by the Asia Research Institute and STS Cluster, Faculty of Arts and Social Sciences, National University of Singapore. The chief organizer was Gregory Clancey, who is in charge of, and responsible for, the institutionalization of STS in Singapore. It was a stimulating experience, and allowed me to reflect on STS in Japan in a wider Asian/global context.<sup>2</sup> The March workshop also led to a round-table session on Japanese STS in an East Asian context held in June 2009 in Taiwan.

It goes without saying that STS is a multi-disciplinary practice and academic movement originating in Europe and the USA. It is primarily concerned with science and technology in society, and is said to have grown out of the ivory tower of History and Philosophy of Science (HPS) and the Sociology of Science. Essentially, most of the theoretical frameworks have been presented in and shared in Western languages, the basic assumptions and models having been taken from techno-science studies in US-European (Western) society. The question arose in the Singapore Workshop as to whether STS can be global, and whether it is possible to analyze so-called globalized techno-science in different societies, particularly in Asia. The reality of techno-scientific development in Asia is both a struggle for and against techno-science; local innovation and technological development have been success-

<sup>1</sup>STS can also be Science, Technology and Society.

<sup>2</sup>Togo Tsukahara, “Identity Problem?: On Japanese STS, framed in the Three-axis model”, in *Science, Technology and Society: An International Journal Devoted to Developing World* (Sage) to be published.

T. Tsukahara (✉)  
Kobe University, Kobe, Japan  
e-mail: byz06433@nifty.com  
e-mail: leiden93@gmail.com

fully achieved by some, and there have been strong calls for more techno-scientific progress to be made. We also recognize the tragic aspect of the fact that while some are eager to adapt and adjust to it, some suffer from it and have to deal with problems such as environmental destruction, the side-effects of medicine, and the alienation of humanity by technology. We need to understand how to deal with science and technology in our social settings, and not only seek to advance technoscience but also to control and regulate it through social/epistemological insights and democratic consensus. It was an exciting experience to discuss with other Asian colleagues how Asian STS should respond to techno-science in different Asian contexts, and to ask questions and discuss the topic from a wider perspective.

In the Singapore Workshop, we reconfirmed that there were early Indian initiatives to deal systematically with STS in Asia, as can be seen in the emergence of *Science, Technology and Society: An International Journal Devoted to the Developing World* (Sage) in 1995. We noted that the establishment of the East Asian STS journal, *East Asian Science, Technology and Society: an International Journal* (Springer) followed initiatives by Indian scholars in 2006. In these journals, we see a growing “scientific (journal) community of STS” in Asian academia. Local societies emerged in research communities in Asia, such as the Japanese STS Society in 2001, and the institutionalization of STS took place within various local settings and universities.

There has also been an emerging trend for scholars to network with each other at international STS conferences such as the Tokyo–Kyoto–Hiroshima conference in 1998, and a series of East Asian STS network conferences which have been held nine times in East Asia since 2000.<sup>3</sup> One such opportunity for further networking will be the 4S annual meeting to be hosted in Tokyo in August 2010. The 4S conference in Tokyo will surely be a milestone for STS, globally, regionally, and locally.

Having briefly considered the development of STS, Fu Daiwie, the Editor of the EASTS Journal, and I thought that we should prepare for the coming 4S meeting in Tokyo, and we agreed that it would be a good opportunity to review the social context of Japanese STS. Thanks to Taiwanese editorial members, we had an opportunity to organize a round-table session at the 3rd EASTS Journal Conference in Taipei, in June 2009. For that, it was our intention to broadly review the state of Japanese STS, and through that lens continue our discussion of Asian STS.

STS scholars in Asia have been concerned with various questions. What are the factors behind the emergence of this trans-disciplinary field in Asia? How can STS help us to deal with the social, philosophical, and cultural problems accompanying the introduction of science and technology in the region since the nineteenth century? Does STS have any influence on techno-science policy-making in Asia? If so, in what way? What are the socio-political, cultural, and economic implications of Asian STS research, and how and for what purpose should Asian STS students seek to exercise it? What are the cultural/epistemological implications and how can the historical impact of the Euro-American origin of techno-science/medicine in Asia be observed? How should independent and indigenous techno-science be carried out,

<sup>3</sup> East Asian STS network meetings have taken place in the following order and locations: 1. Beijing, 2000; 2. Seoul, 2001; 3. Kobe, 2002; 4. Tapei, 2003; 5. Seoul, 2004; 6. Shingyang, 2005; 7. Kobe, 2006/7; 8. Wuhan 2008; 9. Tainan, 2009.

and will that lead to successful local innovation, or to imitation? What constitutes local knowledge on nature/body/mind/spirit in the region, and should that local knowledge be preserved or continue to be produced? Should local knowledge production be combined with the universal knowledge production registry system? Since techno-science is undoubtedly a driving force of the modern Western world, should Asia follow the value/production system of so-called modernity? Studies on science and technology from the social sciences and humanities, and various approaches from the perspective of STS, would surely provide useful insights into these questions.

A focus on Japanese STS does not necessarily mean that Japanese STS is taking the lead in East Asian STS. The choice of Japan is rather accidental and relates to the fact that the 4S conference will be held in Japan. Historically, of course, it is generally agreed that the Japanese were the first to adopt Western technology in the East Asian region, and succeeded in national development through Western industrial and military techno-science in the late nineteenth to the early twentieth century. However, it is also obvious that the consequence of Japan's "successful" adaptation of Western techno-science was territorial expansion and aggression towards its neighbors; in other words, Japanese success created more suffering than benefit in the middle of the twentieth century. Moreover, during economic reconstruction in the latter half of the twentieth century, Japanese techno-science enjoyed remarkable growth, and Japanese technology gained its highest reputation by the 1980s. But at the same time, the environment of Japan was compromised and pollution was a major problem; alienation has become a serious social issue and techno-scientific apparatus/instruments have divided the population into rich and poor, and inequality between old and young, men and women, rural and urban; namely, it is recognized these days that techno-science might have created more social problems rather than bringing egalitarian benefit and fraternity to society. Moreover, the economic success of Japan has now turned out to be more short-lived than expected, and Japanese techno-science is not as strong and active as before.

Also in the course of the twentieth century, we notice that the Japanese are the most Westernized amongst East Asians in every aspect, particularly in academia, modeled after Western scholarship, and Western STS has been quickly interpreted and adopted since the 1970s. However, such adaptation does not necessarily mean that Japanese STS leads in Asia. Rather, such adaptation sometimes only represents the colonial and Western-dependent character of intellectuals; Western theoretical frameworks are simply translated without critical examination, and "introduced". It is true that the Japanese were the first in Asia to translate the work of Joseph Needham and Thomas Kuhn, and even Bruno Latour and Donna Haraway, but this does not always mean that Japanese academia has had fundamental intellectual insights and the analytical freedom or inclination to deal with social and scientific problems to the degree of these and other Western "STS intellectuals".

Generally speaking, in the twenty-first century, what the rest of Asia can learn is not how to assimilate Japanese success, but how to avoid repeating Japan's failures. The twenty-first century is a challenging time for Japanese STS. Are scholars still dependent on Western intellectual frameworks, or developing independent scholarship? Can they be critical and sufficiently creative to

analyze/contextualize their own problems caused by the interface of techno-science and society?

In contrast to the stereotypical national image, “the Japanese” are not monolithic. STS in Japan is multi-layered: there is much debate, dispute, and controversy within Japanese STS. It is easily observed that there are deep-rooted internal conflicts and struggles among academics, stemming from their academic/epistemological status and related to their different socio-economic standing. Even if one cannot see any direct confrontation among them, it is easily noticed that there is considerable diversity in their approaches, methodologies, and political positioning. We need to be sensitive in discussing STS in Japan, and it is necessary to specify which side of STS one is talking about. Scholars in Japan have to be subtle but clear on questions such as whether they belong to the High/Low Church, and whether they are taking the side of the newly established DPJ governmental reform. The dramatic shift in political power in 2009 in Japan from the ever-dominant conservative LDP (Liberal and Democratic Party) to the reformist DPJ (Democratic Party of Japan) is a reflection of such diversity and depth of conflict, and a symbol of quiet but drastic transformation in Japanese society and the relationship between techno-science and society.

Thus, it is hoped that these short papers will give readers an outline of the field, and serve to broadly and briefly contextualize STS in Japan from each specialist's view point. We have invited seven presenters, in three groups. They represent those involved in the institutionalization of Japanese STS (Yuko Fujigaki), historians of Japanese science and technology (Low, Clancey, and Setoguchi), and current sociological topics in Japanese STS (Matsumoto, Nakamura, and Sakura). The topics I have asked them to discuss are as follows:

Institutionalization of Japanese STS and 4S: Yuko Fujigaki, on Japanese STS institutionalization and current topics, and 4S.

Historians: Morris Low (History of Japanese Science), Gregory Clancey (History of Technology in Japan), and Setoguchi Akihisa (History of Biology, with a special focus on Darwinism.)

Sociology and Active Topics in STS: Miwao Matsumoto (Sociology of Sciences/Technology), Masaki Nakamura (Science Communication, with Special Reference to the Science Café Movement in Japan) and Osamu Sakura (Brain Science and Neuro-ethics in Japan and East Asia).

Yuko Fujigaki is currently teaching STS at Tokyo University, and she is in charge of hosting 4S as a member of the board/steering committee of both 4S and the Japanese Society for STS. Together with Hideto Nakajima, newly elected President for Japanese Society of the STS, she is undoubtedly a key person in the recent development of Japanese STS, and has edited one of the standard text books in Japanese, which is now used at Tokyo University. We asked her also to write about current issues and characteristics of Japanese STS.

History of science and technology is an essential part of STS, particularly in Japan. It was historians who created STS in the 1970s and 1980s, and the Japanese history of science and technology is concerned with the interaction between techno-science and society. So we invited three leading experts in the fields: Morris Low for

the history of science, Gregory Clancey for the history of technology, and Akihisa Setoguchi for the history of biology and Darwinism.

As part of our intention in holding this round-table session, we hoped to continue the essence of the discussion on Asian STS from the Singapore workshop in March. So we decided to invite Gregory Clancey, the organizer of the Singapore workshop, who is now guiding the institutionalization of STS in South East Asia at Singapore. The topic we asked him to discuss does not directly deal with his local position and function as an organizer of the South East Asian STS movement; but since he is a leading historian and expert on technology in Japan, we asked him to talk about technology in Japan. For that topic, his position in South East Asia would surely involve Japanese technology.

Due to space limitations, we are only able to include in this issue the papers of the first four speakers. The three other speakers and their work will be discussed in the next issue of this journal.

(To be continued.)