

## **Introduction (2): Japanese STS in Global, East Asian, and Local Contexts**

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It is generally agreed that East Asian economic development has been realized through techno-scientific success. The Japanese were the first in East Asia to adopt Western science and technology and have the strongest economy because of it. It is equally obvious, however, that while local innovation and technological advancement have brought benefits, they have also brought suffering, challenging situations, and unresolved ambiguities. Subjecting techno-science to serious social study is the concern of STS scholars in Asia and around the world.

The twenty-first century is a challenging time for Japanese and East Asian STS scholars. We ask ourselves how STS is critical and sufficiently creative to analyze/contextualize problems caused by the interface of techno-science and society and from an East Asian perspective. As in Part I, I would like to emphasize that STS is a multi-disciplinary practice, “The Japanese” are not monolithic; STS in Japan is multilayered and full of lively debate. In the first part of this issue, four papers contextualized STS in Japan from the viewpoints of various specialists, and I will briefly review these before proceeding.

In the first paper, I asked Yuko Fujigaki to outline characteristics of Japanese STS along with how the discipline has been institutionalized. Fujigaki is currently teaching STS at Tokyo University and 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, the newly elected President of the Japanese Society for STS, she is a key person in the recent development of Japanese STS. In her paper, she explained the institutionalization of Japanese STS since the 1990s, providing a background for the hosting of 4S in Tokyo in 2010. Japan’s STS movement was inaugurated by an initiative of Hideto Nakajima under the auspices of Yoichiro Murakami and his school. Fujigaki discussed the formation process of the STS journal community and its growth in a local academic context. She also refers to the larger regional development of the East Asian STS community, with the

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establishment of the EASTS journal. Selection of representative intellectual content concerning STS through the publication of a textbook is a milestone in the establishment of this discipline, and that was a task Fujigaki performed for Japan. Modeled after the STS Handbook and advice from Sheila Jassanov, Fujigaki edited *Case Analysis and Theoretical Concepts for Science and Technology Studies* (University of Tokyo Press) in 2005.

In order to explain Japanese STS, Fujigaki highlighted a few case studies which are thought to represent some characteristics of Japanese STS. They include a comparison of environmental issues of Minamata disease and cadmium contamination, and a dispute over a nuclear power plant. For the first comparison, Fujigaki pointed out that the lack of public participation has exacerbated environmental conflicts, and she consequently called for more public participation in social problems caused by industry. She went on to state that it is the task of STS to promote/encourage/enhance public participation. Regarding the nuclear power plant issue, she reasoned that, "Japanese society is now in a transition phase from the Technocratic Model (in which getting more and better scientific input into decisions is required and where the technical incompetence of the bureaucracy is the most significant barrier to making the right decision) to the Democratic Model (which emphasizes the involvement of stakeholders in the decision making process). This transition is parallel to the shift from the Deficit Model to Lay Expertise Model or Public Participation Model in science communication." She also commented briefly on present research and practice in science communication in Japan. In conclusion, she suggests that 4S in Tokyo may be an opportunity to "open the door to questions regarding the universality and cultural differences of STS concepts."

The history of science and technology are solid fields in academia and long established intellectual disciplines in Japan. It is no doubt that it was this discipline on which relatively rapid development of Japanese STS was based and fostered. In order to review the current state of research in historical disciplines on technosciences, I asked two leading and one rising historian to write about current problematiques in the following fields: Morris Low on the History of Japanese Science, Gregory Clancey on the History of Technology in Japan, and Setoguchi Akihisa for the field of History of Biology with a special focus on Darwinism in Japan.

Morris Low excellently outlined the current situation of Japanese history of science with some key events and institutions and identified a few works by young and rising researchers across the field. As rightly pointed out by Low, Nakayama Shigeru was one of the founding fathers of Japanese STS, and even though he has long since retired, he continues to be active, and his multivolume series originally published by Gakuyō Shobō constitute a standard work. This series has been translated into English as *A Social History of Science and Technology in Contemporary Japan* and published by Trans Pacific Press. Low also explained recent publishing activities and various academic trends, including approaches to history in Japan's colonial era, as well as the nexus of Korean and Taiwanese histories.

While Low took a descriptive approach to reviewing the field, Gregory Clancey took a theoretical approach; he pointed out difficulties and theoretical problems in the history of technology in Japan and Asia. According to Clancey, the history of

science is “more clearly locatable and demarcated” than the history of technology, particularly in Japan. Even though East Asians and Japanese are easily identified with technology, he wrote that much of “the technology remains a black box.” However, more than a third of articles in Japanese history of science journals have actually been about technology, which compares favorably to their western counterpart, *Isis*. His point was that the separate compartmentalization of the histories of science, technology, and medicine is “not half as ferocious over most of Asia” as in the US or Europe and made a plea for continued convergence using the STS model. He discussed how the history of technology should be situated in Asian academia; how it should overcome colonial technology models and big technology and pay attention to “small and personal technologies”; and how it should “push for the broadening of categories (and curiosities) beyond mere pre-histories of contemporary things.” In Clancey’s words, “What we really need to produce...are full-blooded histories of technology in Asia, which are no less riveting, critical, and believable than stories we have been producing about politics, religions, wars, cultural movements, and other realms in which people strive, suffer, and fail or succeed. The empirical material is there for the taking and is being taken up by more and more scholars operating under an STS rubric.”

Together with this outline by Low and the technological analysis by Clancey, the editor asked Akihisa Setoguchi to focus on a historiography of biology and Darwinism in Japan, a specific field that represents a sharp comparison of cultural differences from Western techno-science studies. Setoguchi identifies three generational shifts of historiography seen at 50-year intervals: 1909, 1958, and 2009. In doing so, he succeeded in explaining a shift of historiography from a Modernist/Nationalist interpretation to a Marxist understanding of Darwinism, and then the diversification and change of focus to bio-technological/environmental sciences in Japan. As suggested in his conclusion, new work on the history of biology in Japan “reflects a new agenda for investigating the trans-national interaction of biological studies in the era of globalization. How did biology support the expansion of the Japanese Empire? How was Darwinism used in the colonial context by those who ruled and by those who were governed? How did the study of biological science impact on post war East Asian geopolitics?” Such questions are also exciting topics for contemporary STS researchers.

In the second part of this special issue, we introduce contemporary sociological and practical topics in Japanese STS. I have, therefore, chosen three topics: Masaki Nakamura on science communication, with special reference to the Science Café movement in Japan; Osamu Sakura and Nozomi Mizuswhima on brain science and neuroethics in Japan and East Asia; and Miwao Matsumoto on the sociology of science.

In Japan, so-called science communication is a kind of a boom, especially since 2005. It is coupled with other policy-oriented concepts like “risk management,” “public participation,” and “consensus making,” on national science and technology policy agenda. Concerning such situations, Nakamura first focuses on the Science Café movement in Japan, which is popular in contemporary Japan, and discusses some of its characteristics. Although a definite “Japanese style” is harder to pinpoint, according to Nakamura, “a lecture-centered format” and “an institutional-based scheme” are observable. Japanese science communication is a part of national

science and technology policy, so he suggests that a “thorough examination of the science communication movement from the critical perspective is thus indispensable...its political implication should also be examine from various perspectives.” With regard to the manner in which interactive communication is conducted in a “Japanese style,” Nakamura analyzes underlying models of communication among participants of Science Café. Such Western models as “sophisticated” PUS, “interactive,” and “two-way communication”, as well as the concepts on the functional agency of knowledge such as “lay expertise” and “mutual learning” are examined in the Japanese context. Nakamura concludes that in the Science Café movement, “a theoretical commitment is imperative” for the STS community, as we are living in an age of “Yes, we can”.

Together with high-tech industrial robots, science concerning the brain-machine interface is one of the frontiers tin which Japanese technology proudly leads the contemporary world. The ethical and social commitment to the field, particularly in neuroscience, should not be overlooked, however, especially in the field of “Neuroethics” which is not merely a sub-discipline of bio-ethics but more of an independent field. Sakura Osamu and Nozomi Mizushima described the current status of neuroscience in Japan and ethical research at various institutional bases. They show us how various projects are organized and funded and, at the same time, how the Japanese are fascinated with this field of science and applied technology that deals with the omnipotent “brain.” They worry about the enthusiastic popular acceptance of brain science, through video games and educational media, and they critically remark that “serious scientists may not have enough resources (time, money, and knowledge) for public communication and that may allow “pop” or “pseudo” neuroscience to prevail in the public consciousness.” Moreover, they argue for “a new strategy for neuroethics and public communication.” They also comment on the controversy concerning “enhancement of human ability,” as well as some disputes on neurotechnologies, and outline the Japanese policy of brain and neuro-science funding. In addition, they point out incongruous perceptions of the state of affairs between the public and experts, and even among experts, in the realms of brain science. They, therefore, call for research ethic consultations for researchers and conclude that “debates in neuroethics should be more sensitive to public concerns, and should be publicized widely.” Hence, such public participation as the Benchside Ethics Consultation is recommended, and according to the authors, we “need to promote improved governance of science, enhance public engagement and include more experts.” At the same time, the “Brain machine interface provides a good model to explore a new approach for the governance of neuroscience and/or of other emerging technologies.”

In the last article, Matsumoto challenges current theoretical issues in the sociology of science and also analyzes the realm of science communication. Strictly analytical, he defines specific theoretical frameworks and suggests how we should go beyond the “third wave” or so-called policy-turn in STS. The underdetermination of scientific knowledge is so stratified in Matsumoto’s frame that he claims a “double underdetermination.” Discourse on public participation is criticized from the social constructionist viewpoint as well. Matsumoto’s remarks are timely, given the current boom of STS policy work and illustrative of how STS itself should be reflective and critical regarding its own socio-political context. Academic discourse and intellectual analysis are not free from social settings and neither is the discourse

produced in the context of STS. His paper undoubtedly represents the theoretical standard of the Japanese analytical/critical mind in STS and in the field of SOS (sociology of science).

It is not included in original plan of this round table, I would like to add one interesting paper of work-in-progress by young STS scholars from Japan here, that which tries to contextualize Japanese current state of STS in the context of EASTS. In this paper, you can see enthusiasm of young STS researchers in Japan to situate themselves in both regional and global context, and this is considered to be able to give readers one of the current orientations of Japanese STS. This paper is made by Ryuma Shineha and Arisa Ema (both are graduate student at Kyoto University and active members of STS Network Japan) and me, and originally designed for a working paper for research project proposal. As a result of discussion at the 4th Young East Asian STS Workshop, held in Kobe, December 2009, editors decided to include this as an appendix for Japanese STS round table.

All in all, I think these seven papers provide us with a sufficiently broad picture of the current state of affairs in Japanese STS. We see obvious oppositions and discords among each other, for instance Sakura's call for more public participation to brain sciences against Matsumoto's skeptical remarks on the "policy turn" and different approaches by Low, Setoguchi, and Clancey. I believe, however, that such diversity and disagreement will make the field richer, and we tend to enjoy polemic intellectual exchange in the field of STS. One thing we should not ignore is that the Japanese STS community is not closed to outside influence and participation. We are now trying our best to open ourselves and encourage greater exchange between regional/global STS communities. All Japanese contributors are active members of EASTS. I am an Associate Editor representing the Japanese editorial board; Fujigaki, Sakura, and Matsumoto are members of the Japanese editorial board; Setoguchi is a book review editor and Nakamura collaborates on the task. Low and Clancey are also OEA (Outside East Asia) editors, who helped us in editing this issue. I would like to say that these issues are a collaboration, and although we are not in agreement with each other on every argument, it should be agreed that this journal is becoming a site of productive exchange, an intellectual contact/trading zone that spans nationality and discipline.

It is indeed our pleasure, and actually our intention, that these papers focus more intellectual attention on Japanese STS in the context of EASTS. Through these special issues on Japanese STS, we expect not just recognition, however, but also a critical spirit and deeper/thicker exchange. We are inspired by a new intellectual gaze from inside/outside and encouraged by the implementation of a richer knowledge interface and multidimensional dialog. It is actually the biggest problem that STS discussion in Asia (as elsewhere) has tended to take place not only within national borders and be managed by specialists or experts. Such discussion, even about Japan, should not be confined to the Japanese, East Asians, experts, and specialists but should be open and free to wider participation, to any concerned member of the public. Though it is not expected to be universally appealing, we realize that we are all context-bound, and no one has exclusive authority to discuss Japanese STS issues.

Thus, we hope these papers become a "cordial invitation" to others outside our communities. In particular, these special issues are hoped to function as a "virtual invitation" into Japanese STS and more specifically to the 4S conference planned at the "Eastern Capital," Tokyo, in the summer of 2010.