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# **STS in Japan in Light of the Science Café Movement**

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Science communication is definitely one of the most prominent topics in Japanese STS, especially over the last several years. The year 2005 is considered to have been the 'First Year of Japanese Science Communication' (Kobayashi 2007: 18). It was a landmark year when science communicator training programs were established in three universities under the auspices of the Ministry of Education, Culture, Sports, Science, and Technology (MEXT). In addition, two leading national science museums also launched similar training programs the following year when the Third Science and Technology Basic Plan (FY2006-2010) was announced by the government. The plan sought to: (1) encourage outreach activities by universities and research institutes, (2) promote public participation in science and technology, and (3) help cultivate professional science communicators (Government of Japan 2006). Because it was explicitly embedded in government science and technology policy, science communication began to receive great attention, especially within the scientific community, and this led to a wide range of related activities occurring over a period of just a few years.

## **1. Science Café: Most popular science communication Activity in Japan**

Among those activities, the science café seems to have been the most influential. Science cafés offer an informal forum for public discussion on the latest scientific issues. The concept has been described in the following way by science café organizers in the UK:

*Café Scientifique<sup>1</sup> is a place where, for the price of a cup of coffee or a glass of wine, anyone can come to explore the latest ideas in science and technology. Meetings take place in cafes, bars, restaurants and even theatres, but always outside a traditional academic context.<sup>2</sup>*

Originally launched in the UK and France around 1997, this concept has gradually spread throughout the world. In May 2007, the Second International Conference on Science Cafés was held in Leeds. Ninety science café organizers from more than 30 countries, including Germany, Italy, Denmark, the USA, Brazil, Latvia, and Japan gathered there.

The science café is a product of the contemporary science communication movement. This can be seen in its ‘dialogue-based’ approach. ‘Science communication’ as a newly emerging field differs from traditional approaches in terms of its strong emphasis on the ‘interactive’ and ‘two-way’ communication. In other words, in contrast to traditional initiatives that value the dissemination of scientific knowledge, science communication initiatives emphasize ‘dialogue’ and ‘two-way communication’ between science and the public. Specifically, the focus is not solely on the public merely listening to the scientists; rather, the scientists also listen to the public. From the perspective of this new focus in science communication, the science café is quite symbolic because the ‘dialogue’ between the scientists and the public is highly visible in these situations. In regards to this point, Duncan Dallas, the founder of British science cafés, points out the importance of the ‘venue’ for the science café in the following statement:

*A unique characteristic of the Café Scientifique is that changing the venue changes the tone and nature of the discussion. In a lecture theater you*

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<sup>1</sup> The science café is typically called “café scientifique” in the UK.

<sup>2</sup> <http://cafescientifique.org/index.htm> (last accessed on 30, Sept, 2009)

*expect to be lectured to, in a café-bar you expect to discuss scientific matters on equal terms, and that is what people like.*(Dallas 2006: 227)

As this statement indicates, the science café is certainly an activity that emphasizes a discussion between the scientist and the public with all parties on an equal footing.

In terms of the worldwide development of the science café movement, the Japanese situation is outstanding. After being featured in *The White Paper on Science and Technology* in 2004, this movement began to attract attention among those interested in bridging the gap between science and the public. In autumn 2004, the first Japanese science café was launched in Kyoto by a non-profit organization (NPO) that specializes in the lifelong learning of everyday citizens. The following year, various science cafés were also launched. The organizers included an NPO that specializes in Biotechnology Communication, a private foundation promoting advanced science and technology, a student NPO, MEXT, local government, national universities, the National Observatory, a bookshop, a motivated individual, and a volunteer group of young STS researchers of which the author is a founding member. In the spring 2006, the Science Council of Japan, the representative body for the Japanese scientific community, organized 21 nationwide science cafés during Science and Technology Week, thereby contributing to the promotion of the science café among the general public. Now, more than 100 organizers are running science cafés on a regular or occasional basis in Japan. Indeed, the number of science cafés has grown quite rapidly in only a couple of years. Japan is definitely one of the countries in which the science café has achieved its greatest success.<sup>3</sup>

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<sup>3</sup> In reference to the detailed information about the development of science café movement in Japan, see Nakamura (2008) and Matsuda (2008).

## 2. Characteristics of the Japanese Science Café Movement

Science cafés can be conducted in various ways. In the UK, a scientist is typically invited to give a preliminary talk for about 20 minutes, followed by a break for drinks. Then a discussion takes place for approximately 1 h; this has been described as “the interesting part of the evening” (Duncan 2006: 228). In contrast, French science cafés typically invite three to five guests, each from different disciplines, i.e., sometimes from NGOs or private companies. At the beginning of the event, each guest gives a short self-introduction, usually within a minute, and a discussion among the guests and the public follows. A diversity of vision is emphasized by inviting guests from various fields; this diversity of vision is also supposed to be fostered by the wide range of audience members at British science cafés. In Denmark, they established a ‘Danish model’ for conducting a science café, i.e., valuing the dialogue between science and art (Balling et al. 2004).

In contrast, the ‘Japanese style’ of conducting a science café is harder to pinpoint. Most Japanese science cafés invite only one scientist, but some invites several. Some use PowerPoint presentations, while others do not. The discussion typically involves the entire audience, but some science cafés set up multiple, small table discussions, especially at events with large audiences (i.e., sometimes more than 100 people). Japanese science cafés can perhaps even be defined by such diversity. Nevertheless, despite the diversity, two points seem to be common themes, i.e., a lecture-centered format and an institutional-based scheme.

As previously mentioned, only 20 min are allowed for preliminary talks by the guest in the UK, while only a few minutes are given to the guests at the outset in France. On the other hand, in Japan, the guests are often allowed to give a

preliminary talk for more than 30 min, and sometimes, these talks go beyond 1 h. The event seems to be dominated by the talk of the scientist. This lecture-centered format is enhanced by the use of the PowerPoint slide presentation. Its use is basically discouraged in the UK and in France based on the fear that it may foster a speaker-listener relationship rather than foster true dialogue. In contrast, such anxiety is not apparent among most Japanese science café organizers. Indeed, PowerPoint presentations are widely used in Japanese science cafés.

Additionally, most science cafés are organized by universities or research institutions as a form of outreach activity. Even though various actors are engaged in the science café movement in Japan, the majority seems to be based in public funded universities and research institutions. In fact, science cafés have grown rapidly in Japan over the last couple of years due to the support of national science and technology policy. As its grassroots basis is frequently emphasized, especially in the UK where motivated individuals and voluntary groups are the main players in the science café movement, the leading role played by Japanese universities and research institutions stands out in the international context. Such an institutionally-based or top-down scheme might have some influence on the aim and the orientation of the science café movement; e.g., the lecture-centered format seems to be one of its consequences.

### **3. Underlying models for 'Interactive' / 'Two-way' Communication**

Referring to the lecture-centered format of Japanese science cafés, several explanations for this seem possible. The most plausible account is that scientists are so deeply affected by the traditional lecture-based public communication model that they are simply not accustomed to listening to the public, which is imperative for 'mutual' dialogue. Most scientists do not have any experience in

public communication and do not know how to participate in ‘dialogue-based’ communication. I have attended many science cafés in which the scientist prepared too many PowerPoint slides in advance and spoke too long at the event. The abundance of information might be an expression of their care for the ‘ignorant’ public, but it dooms the event as a ‘lecture’ held in a café. Nevertheless, this problem might be ameliorated as time goes by and scientists become more accustomed to the café format. Indeed, various attempts have been made to encourage discussion at the event, including limiting the audience to a few dozen members, introducing group discussion in the event, or taking advantage of ICTs. Many organizers seem to be conscious of this point.

Nevertheless, other problems seem to reside at a deeper level. Even if discussion is given much attention at an event, it does not mean that they overcome the traditional Public Understanding of Science (PUS) approach, which is the slogan of the newly emerged science communication. In other words, even if ‘interactive’ or ‘two-way’ communication is guaranteed at the event, the format of the event can still be a ‘sophisticated’ PUS model. To discuss this point, the underlying models behind ‘interactive’ or ‘two-way’ communication must be examined.

Generally, when ‘interactive’ or ‘two-way’ communication is referred to by the science communication movement in Japan, they seem to have two models in mind. One is an ‘educational’ model, and the other is a ‘co-production’ or ‘mutual learning’ model. The latter has been discussed in STS over the last decades, especially in the context of public engagements with science and technology.<sup>4</sup> Criticizing the traditional scientist-public relationship as a ‘deficit model’, the notions of ‘local knowledge’, ‘ingenious knowledge’, or ‘lay

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<sup>4</sup> See, for example, Irwin and Wynne (1996).



expertise' have been proposed for initiating and enhancing public engagement in science and technology. Public engagement is expected to enrich science communication not only because it guarantees procedural legitimacy in a democratic society but also because it contributes to increasing its epistemic relevance. Scientists have a lot to learn from the public. The advantages of 'interactive' communication are thus introduced by its mutual learning process, and the dialogue among scientists and the public ensures the co-production of better outcomes.

However, even though 'interactive' or 'two-way' communication is appreciated in the science café movement in Japan, its implicit implications seem to be distinguished from the 'mutual learning' of scientists and public. That is what we call the sophisticated 'educational' model, where interactive communication is utilized, not for mutual learning but rather for improving the public understanding of science. Looking at the trends in school education, based on the aim of compensating for lecture-based teaching, the 'interactive' method is utilized to improve the understanding of textbook knowledge. Student engagement, such as discussions or group work, is strongly valued. Yet, as a whole, this discussion does not endanger the position of the teacher because the flow of knowledge is still one-way, that is, always from the teacher to the students. The teachers still always have the 'right answer', and the interactive method is nothing more than a sophisticated educational tool that improves the students' understanding of a given subject. The apparent two-way communication does not necessarily guarantee mutual learning through the process and is compatible with the top-down approach.

In most science cafés in Japan, 'two-way' communication, even including active discussion, seems to remain in the sophisticated 'educational' model, and

the intention of fostering 'mutual' understanding seems rare though a few exceptions exist. Actually, the discussion time is seen as providing an opportunity to deepen the understanding of the audience for the given theme in many cases. The scientist's talk, not the discussion, dominates the event; the discussion serves only to complement the talk of the scientist. The abundance of PowerPoint slide presentations might be a representation of such an implicit presupposition. As already mentioned, the scientific community has led the science café movement in recent years in Japan. The current 'interactive' or 'two-way' communication in Japanese science cafés is thus compatible with the top-down initiative.

#### **4. Challenges to the STS Community**

Facing such a situation surrounding the science café movement in Japan and science communication in general, what can the STS community do? What is their actual response? What are the challenges facing the STS community?

First of all, a theoretical commitment is imperative. As mentioned previously, the basic notions and concepts in science communication must be clarified and scrutinized. Even though apparent novelty is always emphasized in the science communication movement as a newly emerging field, the key notions and concepts seem to be often used without thoughtful examination. Thorough examination of the science communication movement from the critical perspective is thus indispensable. Still, the Japanese science communication movement has a strong connection with national science and technology policy; thus, its political implications should also be examined from various perspectives.

At the same time, the Japanese STS community has been engaged with the science café movement from the beginning. In fact, a group of young STS researchers brought the idea of the science café to Japan. They conducted a

survey on the British science café movement, and the resulting report became the source of a short column detailing the science café, which appeared in the *White Paper on Science and Technology* and became the launching point for the Japanese science café movement as previously mentioned. The author of this paper decided to launch a group named ‘Café Scientifique Tokyo’ with them to organize science cafés in Tokyo in 2004. Our aim was quite simple, i.e., to make the science café an initiative through which substantial public engagement in science and technology could be achieved. We were concerned that the science café could just become a sophisticated PUS tool in Japan. With that concern in mind, in addition to organizing science cafés in Tokyo, we organized symposia for science café organizers; conducted an international survey of science café movements to discuss the future of the science café in an international context; launched a mailing list for science café organizers, which has now more than 300 subscribers; and wrote papers and gave presentations at various public lectures and seminars that always highlighted the link between the science café movement and public engagement with science and technology. We tried to design the science café movement so that it opened up new possibilities for science and society.

Such a thorough commitment to the science communication movement seems to be one of the characteristics of Japanese contemporary STS. In fact, STS researchers introduced a consensus conference in Japan, and many STS researchers are actually committed to various public engagement initiatives. Identifying how STS researchers should combine academic study, theoretical commitment, and practical intervention is one of the new challenges that we as a community must deal with as we enter the twenty-first century.

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