

Sipping Science: The Interpretative Flexibility of Science Cafés in Denmark and Japan

Kristian H. Nielsen, Gert Balling, Tom Hope, and Masaki Nakamura

Received: 6 July 2012 / Accepted: 15 August 2014
© Ministry of Science and Technology, Taiwan 2015

Abstract Science cafés were originally conceived as an informal, dialogue-based venue for public participation in science. The first science cafés took place in the United Kingdom and France in 1997–98. Two formats—one featuring a single speaker (United Kingdom) and one with a panel of speakers and a moderator (France)—resulted from these first initiatives. Since then, science cafés have been adapted to other sociocultural contexts, and today, science cafés are being conducted in many different countries and for many different purposes. We examine the emergence and development of science cafés in Denmark and Japan with particular focus on the role of science and technology studies (STS), national contexts of science communication policy, and cultures of public participation. We find that in both countries, despite different expectations of public deliberation about science and technology, science cafés have been easily embedded in the “new” scientific governance programs (Irwin 2006). This is mainly due to institutional support in the national research systems and the involvement of STS scholars who, in their support of public

Acknowledgments We are grateful to the Japan Society for the Promotion of Science and the Scandinavian-Japan Sasakawa Foundation for financial support of travels and short-term visits at the Tokyo Institute of Technology and Osaka University.

K. H. Nielsen (✉)
Centre for Science Studies, Ny Munkegade 118, DK-8000, Aarhus C, Denmark
e-mail: khn@css.au.dk

G. Balling (✉)
Ved Lindevangen 32, 2, th., 2000, Frederiksberg, Denmark
e-mail: gertballing@privat.dk

T. Hope (✉)
International Student Center, Tokyo Institute of Technology, 2-12-1-W1-9 O-okayama, Meguro-ku, Tokyo 152-8550, Japan
e-mail: tomhope@ryu.titech.ac.jp

M. Nakamura (✉)
Centre for Education in Liberal Arts and Sciences, Osaka University, 1-16 Machikaneyama-cho, Toyonaka, Osaka 560-0043, Japan
e-mail: masaki@celas.osaka-u.ac.jp

participation in science and dialogue-based science communication, have advocated science cafés as a meaningful way to intervene in science-society relationships. “Sipping science” in a science café, enabling public participation in science deliberations, has interpretative flexibility, appealing to a wide variety of people and stakeholders engaged in public communication of science and technology.

Keywords Science cafés · dialogue-based science communication · public participation in science · Denmark · Japan

1 Introduction

There is a growing interest in the scope and meaning of public communication of science and technology across political and national cultures. Science and technology studies (STS) have long emphasized the need to rephrase in terms of human values, social practices, and entangled networks the ahistorical and a-cultural perception of science, which depicts science as nothing but universal method and pure rationality. Similarly, scholars and practitioners of public understanding of science and science communication are beginning to recognize the crucial importance of social and cultural contexts of public communication of science. In themed sections and individual articles on science communication outside the dominant contexts of the United States, the United Kingdom, and other drivers within science literacy and public understanding of science, many authors have analyzed developments in Latin America, the Mediterranean countries, Denmark, Japan, India, China, Taiwan, and so forth (see, for example, Castelfranchi 2004; Chen and Wu 2007; Deng and Wu 2010; Evangelista and Kanashiro 2004; Greco 2004; Higashijima, Takahashi, and Kato 2009; Juraku, Suzuki, and Sakura 2007; Mazzonetto 2005; Nielsen 2005; Pitrelli 2005).

Recently, in a book dealing with how publics across the globe relate to science, Bauer, Shukla, and Allum (2012: 1) considered the “great societal conversation about science” that goes on around the world, noting:

From a comparative perspective, this societal conversation fluctuates in intensity, topics covered, engagement of the population, and focus on controversies. It is influenced by the cultural context of language, political culture, local history of science, and current levels of technological development. Societal conversation implies more than opinions expressed in survey interviews. It encompasses writings in print and news media, exhibitions, stakeholder consultations, science policy documents, informal and formal learning by young and old, to name but some.

In this article, we too would like to stress the urgency of this conclusion and explore its implications for a near-global phenomenon in science communication, namely, science cafés. Within the last couple of decades, science cafés have emerged in many different countries as a loosely defined format for communicating science in informal settings. Ideally, science cafés take place in public venues such as cafés, bars, museums, or libraries with no or very few restrictions on entry and ample room for two-way dialogue between the speaker(s) and the audience. The emphasis on

establishing direct communication between scientists and their audiences in relaxed, familiar social situations has resulted in an identification of science cafés with public participation in science. Science cafés generally are seen as tools for establishing “a real dialogue, a two-way communication . . . , [which is] the basis of negotiation, creating an opportunity for the audience to contribute to the meaning of the presentation” (Riise 2008: 303).

Science cafés have emerged in many different countries partly because of the sharing across national boundaries of ideas and experience. In the process, science cafés also have been adapted to local contexts that, we expect, shape the ways in which “real dialogue” is being enacted. As a dialogue-based mode of science communication, science cafés form part of the international turn to public participation in science or democratization of science and technology, which has had considerable impact on the sciences, STS, and science policy making (Bucchi and Neresini 2008; Callon, Lacoumes, and Barthe 2009; Irwin 2006). Moreover, there is growing concern about the implementation of participatory events in different settings and their extension to decision-making processes that are highly dependent on technical expertise (Collins and Evans 2007). The high aspirations attached to two-way communication between science and its audiences need to be moderated by taking into account the ways in which specific events such as science cafés are being promoted by institutions and remain (and probably should remain) embedded in national cultures of public deliberation.

A comprehensive study of the global spread of science cafés would have to include these two aspects of the specific contexts in which different science café formats are being implemented: the preceding organization and the actual performance of the event. Since there is no widely accepted standard setup for science cafés, except for the rules of thumb just mentioned, science cafés, like many other modes of informal science communication such as science festivals or street science, are very flexible. Science cafés may be adopted for purposes of informal science education, for debates about controversial science and technology issues, for public outreach, for citizen engagement, and so on. The enactment of specific science café events introduces new contingencies, since the open discussion is impossible to predict (and should be, according to the very idea of a science café).

At the core of this article is an attempt to engage empirically and conceptually with the emergence and development of science cafés in Denmark and Japan. The authors of this article have taken active part in introducing science cafés in these countries and been active players in the establishment and promotion of an international, loosely connected network of science café organizers. With this article, we wish to present and reflect on our own experiences by contextualizing science cafés in Denmark and Japan. We believe that comparing science cafés in Denmark and Japan is rewarding for two reasons. First of all, the two case studies provide interesting backgrounds for studying the introduction and assimilation of an open, informal science communication format like the science cafés. We expect to see differences in how Danish and Japanese science café organizers have adopted the international science café formats. Second, we also would expect that similarities would be discernible across national boundaries, owing to the existence of an international network of science café organizers and the widespread political acceptance of public participation in science. The interplay between global networking and local adaptation is what fascinates us

about science cafés, and we want to tease out from our own experiences lessons that may be more generally applicable to the field of public communication of science and technology.

The article is structured as follows: First, we review the literature on participatory science communication activities in different national contexts with a particular emphasis on consensus conferences held in Denmark and in East Asia. We then present the origins and the global spread of science cafés. Then follows our narrative about the introduction of science cafés in Denmark and Japan, emphasizing the role of individuals, networks, and institutions. We also examine (some of) the designed procedures to promote dialogue with the audience and critically reflect on the ambition of science café organizers to stimulate “real dialogue.” Last, we put forward our general conclusions with respect to public participation in science in different contexts.

2 The Interpretative Flexibility of Public Participation in Science

The notion of public participation in science has roots in the 1960s and 1970s, when ideas about deliberative democracy and public participation in decision making related to science and technology began to flourish (Bucchi and Neresini 2008; Einsiedel 2008). Since then, science and technology-based controversies about energy, sustainability, biotechnology, climate change, health, and globalization have only strengthened the need for citizens to engage in critical debates that affect their futures (Callon, Lacoumes, and Barthe 2009; Leach, Scoones, and Wynne 2005). At the turn of the twenty-first century, universities and other higher education institutions, along with national governments and supranational institutions such as the European Union (EU) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), had fully embraced public participation in science (Mejlgaard et al. 2012; UNESCO 1998).

As Irwin (2006) noted, the institutional support of public participation in science was conceived largely in response to the perceived lack of public legitimacy of science, the assumption being that consulting citizens in relation to science and technology issues generally reduces their criticisms and skepticisms with respect to scientific knowledge and technological innovation. It is ironic that, as governments began harnessing public participation in science to achieve what Irwin called “new” scientific governance, enabling dialogue and participation became equal to reducing critical voices to a minimum. Consequently, STS scholars have begun criticizing participatory activities for framing participatory science events in terms of technical expertise and for failing to engage with a broader public—particularly the disengaged, the uninformed, and the uninterested, whom Horst and Michael (2011), following Isabelle Stengers, refer to as “the idiot” (Horlick-Jones et al. 2006; Irwin, Jensen, and Jones 2013; Kerr, Cunningham-Burley, and Tutton 2007).

There is a near-global interest in public participation in science, and the variety of participatory activities is high (Einsiedel 2008). Just as the claim that the turn to public participation in science engages citizens, enabling them to influence decision making, needs to be qualified by looking closely into the actual design, performance, and outcome of participatory activities, so does the idea that such activities are homogeneous across cultures. The Monitoring Policy and Research Activities on Science

in Society in Europe (MASIS) project found that there are “heterogeneous models and levels of public engagement in science and technology decision-making in Europe” (Mejlgaard et al. 2012: 12). Some European countries, most notably the Nordic countries, but also Belgium, France, and Switzerland, have formalized procedures for public participation in science and a high degree of de facto public involvement in science and technology decision making, whereas others, including many Eastern European countries, have no procedures and little involvement. Interestingly, the lack of formalized procedures is no obstacle to public participation in science, as the cases of Iceland and Austria demonstrate. Nor do formalized procedures guarantee public involvement, as seen in some Eastern European countries such as Montenegro, Slovenia, Slovakia, and Croatia. Nascent civil societies, lack of appropriate institutions, or noninclusive political culture were identified as barriers for democratic deliberation about science and technology (Mejlgaard et al. 2012: 12).

The Danish consensus conference probably is the best-known method for enacting public participation in science. The Danish Board of Technology is usually credited with the development of the participatory consensus conference in which politicians, experts, and representatives of the broader public come together to perform technology assessments. The consensus conference, which includes two preparatory weekends and a three-day conference, results in a final document with the citizen panel’s assessments. The document is published and circulated to all members of the Danish parliament and relevant decision makers (Danish Board of Technology 2006). Although the consensus conference has been widely used and recognized as a method that “travels well (works in multiple national and socio-cultural contexts)” (Einsiedel, Jelsøe, and Breck 2001), the method also has what Horst (2008: 272) calls “interpretative flexibility”: it includes elements of knowledge dissemination, democratic deliberation, and negotiation between divergent beliefs and thus may be perceived very differently by different actors.

Paraphrasing Einsiedel, Jelsøe, and Breck and Horst, we observe that the consensus conference method has traveled to East Asia, where it also has worked well, in large part owing to its interpretative flexibility. The first consensus conference in Japan took place in 1998 as a smaller feasibility study conducted by a group of STS researchers and funded by two private foundations (Wakamatsu 1999). The topic was gene therapy. Despite initial doubts, the organizing team successfully recruited experts and citizens who were willing and capable of acting the roles assigned to them. The experts tried to communicate the technicalities of the topic, although obviously some were better at doing so than others. The citizen panelists were eager to ask questions and discuss, and they also produced a consensus document. Instead of circulating the document to policy and decision makers, the organizers held an open symposium about the conference and its conclusions, achieving some media coverage. The study seemed to prove the feasibility of doing consensus conferences in Japan. Yet, the organizers also had to conclude that it would be difficult to achieve impact on actual decision-making processes, as public participation in science and public accountability of science at the time was not generally accepted in Japanese society.

In 2000, for the first time, the Japanese government introduced the consensus conference method in response to the long-lived public debate in national media about genetically modified crops (Nishizawa and Renn 2006). Traditionally, the scope of participatory activities has been rather limited in Japan, where relatively

closed groups of well-established experts, government officials, and industrial representatives usually make decisions about science and technology. When in the 1970s technology assessment was introduced into Japan, citizens were never intended to be part of the process. The official consensus conference, hosted by the Japanese Ministry of Agriculture, Forestry, and Fisheries, was an experiment in introducing deliberative political culture into Japan, and the members of the citizen panel seemed to be attentive to this fact, some suppressing criticism in order to allow for the consensus document to have impact on policy making. They feared that the authorities would simply ignore critical statements. Self-censorship by citizens, thus, turned out to be the greatest problem. Nishizawa (2005: 486) concludes that even though the consensus conference method may have been radical in comparison to conventional conflict-resolution methods in Japan, the content of the deliberation was profoundly shaped by “the conventional policy style of consensual and technocratic decision-making and the conformist attitude in Japan.”

The translation of the consensus conference from the Danish to the Japanese context nicely illustrates the potential and the challenges involved in implementing standard formats for public participation in science in new social and cultural contexts. The consensus conferences appeal to a broad range of actors, including STS researchers, civil servants, and politicians in Europe and in East Asia. Moreover, the interpretative flexibility of the consensus conference method makes it possible to nurture different expectations of the method’s outcome and to try to make use of it accordingly. Whereas the consensus conference method in Denmark is understood as an input to technology assessment and policy making, the consensus conferences in Japan have been compared to staged experiments in which the participants can play with new, unconventional identities. This observation is supported by the fact that the consensus conferences enacted by the Japanese authorities also have been the ones in which the participants have found it most difficult to play along, leaving behind their received views of the proper relationship between citizens and authorities. Owing to the fact that they embody popular ideas about participatory science communication and deliberative democracy, consensus conferences are easily transferred from one context to another. Consensus conferences also are flexible enough to allow for cultural differences in the very enactment of the method.

Like consensus conferences, science cafés have become popular, if not fashionable, in the last decades. Although the two methods both are part and parcel of the turn to public participation in science, there are subtle differences: while consensus conferences aim to facilitate public participation in decision-making processes pertaining to science and technology, science cafés are designed to accommodate participation in public deliberations about science and technology. Consensus conferences rely on sponsorship and a high degree of organization in order to meet their particular aim (Bucchi and Neresini 2008). In comparison, science cafés are cheap and have no fixed agenda, except for the themes chosen by their organizers and the moderation of the deliberations in the café. As a format for stimulating public participation in science deliberations—and one that requires little organization, little funding, and little micromanagement of the event itself—science cafés, unsurprisingly, also “travel well” across national boundaries and also are characterized by a high degree of interpretative flexibility, perhaps even more so than consensus conferences. For the same reasons, we would accept that science

cafés, like consensus conferences, are easily accommodated into “new” scientific governance schemes in Denmark and Japan, similar to those discussed by Irwin (2006). Still, we also expect to find that different organizers and different users of science cafés can have very different ideas about what constitutes “real dialogue” in a science café.

3 The Making of an International Science Café Movement

Like consensus conferences, science cafés originated in Europe and then spread globally. One of the first science cafés, known as the Café Scientifique, took place in a wine bar in Leeds in 1998. Conceived by Duncan Dallas, who used to make TV programs on science, the event was inspired by the French Cafés Philosophiques where people turn up in cafés to discuss philosophical issues. The event was advertised as “an evening where, for the price of a cup of coffee or a glass of wine, anyone can come to discuss the scientific ideas and developments which are changing our lives.” Much to the surprise of the organizer, a speaker on Richard Dawkins’s idea of the selfish gene drew a crowd of forty to fifty people (Dallas 1999, 2006). Since then, backed by funding from the Wellcome Trust, which enabled the appointment of an organizer to travel the country and assist people in setting up cafés in their own town or city, the Cafés Scientifiques have spread across the United Kingdom, with more than fifty or so local initiatives up and running. The Cafés Scientifiques in the UK have their own website (www.cafescientifique.org), and there are a number of Junior Cafés Scientifiques in schools (www.juniorcafesci.org.uk).

The British format of science cafés involves an invited speaker (usually a scientist or science writer), a venue (a café-bar with a side room), and a topic that has a scientific basis, but also social relevance. The invited speaker talks for about twenty minutes or so without any visual aids; then, there is a break for drinks followed by questions and discussion for about an hour or so. The audience is anyone with an interest in the topic or simply going to the café. Information about the events is distributed by e-mail and possibly posters and flyers in a local library, in the venue itself, and in other places. Importantly, all the cafés are run locally (Dallas 2006).

In an early reflection about the attraction of this format, Dallas (1999: 120) wrote:

There is no agenda, hidden or overt, to defend or sell science. If people don’t like what they hear, they object forcefully. The subjects, or speakers, are picked because they are what people want to hear and they are often controversial. The audience sets the agenda, not the scientists. Not surprisingly, the biosciences feature heavily, but the café has also tackled chemistry, physics, maths, and IT. The venue, a café-bar, is where the audience feels comfortable. The atmosphere is friendly and convivial, rather than academic and competitive. This is not a “self-improving” audience, in the way that Victorian scientific societies arose. People don’t just want to listen. They want to participate and be heard on equal terms with the scientists.

Around the same time in France, other types of science cafés were appearing. In the summer of 1997, the Société Française de Physique organized a public “Bar des Sciences” as part of their annual conference, held in Paris. Later that same year, in

Lyon, science journalist Nathaly Mermet and members of the Sciences et Citoyens (Sciences and Citizens) club at the Centre National de la Recherche Scientifique (National Center for Scientific Research) began their regular series of science cafés. (The Lyon group also organized the first Junior Cafés.) The French format, known as the Café des Sciences or Bar des Sciences, differs from the British Cafés Scientifiques. There is an “animateur” (host or moderator) introducing the topic of the event, which is usually selected by the local organizing committee. The animateur also directs and inspires the debate. There is a panel of “intervenants” (introductory speakers), usually three to five persons, rather than just one scientist. The panel is selected with a view to balancing of opinions and expertise. Typically, there are one or two scientists (representing different fields of expertise), a representative of some form of counter-expertise, for example nongovernmental organizations or other citizens’ groups, and a politician. Each panelist is allotted but a brief time for presentation before the general discussion sets off. The French model includes two important elements: the debate primarily takes as its point of departure the questions of the audience, and different voices of opinion, expert as well as nonexpert, will have to be expressed. Both elements serve to increase the interaction between the introductory speakers and their audience (Grand 2007: 6–7).

Since then, science cafés have emerged in many countries across the globe, such as Australia, Brazil, Denmark, Italy, Japan, the Netherlands, Poland, the United States, and several African countries. The spread of the British Café Scientifique model was partly enabled by support from the British Council and the Wellcome Trust. From 2004 onward, the British Council has been running Cafés Scientifiques in more than forty countries, from Australia to Brazil, Egypt, and Turkey. Also, the Wellcome Trust has supported the internationalization of the science café movement. For example, an International Engagement Award from the Wellcome Trust enabled the establishment of a science café in Uganda, and the Wellcome Trust also sponsored the Café Scientifique Organizers’ Conference, held on 12–13 March 2007, in Leeds (Grand 2007). From 2010 to 2013, the European Commission within the 7th Framework Programme funded a European network of science cafés called SciCafé (www.scicafe.eu). In the United States, there is a network of science cafés operated by NOVA scienceNOW (www.sciencecafes.org).

To sum up, two more or less well-established and well-known ways of doing science cafés (not counting the junior science cafés) have originated in Europe: one with a single speaker presenting his or her own research field and one applying a panel/discussion format to open up for a discussion of broader themes involving aspects of science, technology, and society. The international meetings, projects, and social networks have resulted in the sharing of ideas and experiences. Science cafés are continuing to expand in numbers, and organizers have been prone to experiment with new formats. In the report from the 2007 Leeds conference, it was observed that new setups are being engaged: comedy cafés, cafés in art and photography galleries, and play readings (Grand 2007). Also, science cafés have been set up in ethnic minority areas and in different venues such as shopping centers and theaters. The SciCafé network funded by the EU resulted in science cafés in Second Life and online streaming of science cafés. Moreover, scientific institutions and governments increasingly are using science cafés as an integral part of their outreach and participatory activities. As science cafés proliferate across the globe, novel concepts are being tried out; yet, at

the same time, science cafés, as part of the trend toward public participation in science, have become mainstream participatory activities.

4 Denmark: Science Cafés as “Consensusing”

In 2001, inspired by the early initiatives in the UK and in France, Gert Balling and Emmanuelle Schuler initiated what they referred to as the Copenhagen School of science cafés (Balling and Schuler 2002). At the time, Gert Balling was pursuing a PhD in cultural studies of cyborgs, while Emmanuelle Schuler was active in the fields of nanoscience and risk assessment. They based their science café on the French model with a moderator and a panel of speakers. Like the French organizers, Balling and Schuler wanted the Copenhagen science cafés to include representatives from many different spheres of society: scientists and engineers, of course, but also artists, journalists, politicians, grassroots, and so on. Moreover, they expanded the concept of the science café to include a preparatory dinner with a glass of wine, where the moderator and the invited panel speakers can get acquainted before the actual event. The dinner is seen as an important part of the Copenhagen science cafés, as it tends to improve the mutual understanding between the experts, easing conversation and dialogue on stage (Balling and Schuler 2002: 31).

The introduction of the French science café format in Danish culture was relatively straightforward, the Copenhagen science cafés being received well by experts, policy makers, and participants in the science cafés (see comments by participants in Balling and Schuler 2002). This reception was to be expected. First of all, Denmark has a long and thriving tradition of democratic deliberation on most political topics, including science and technology. The first popular science magazines date back to the mid-nineteenth century, and lectures, meetings, and discussion panels relating to scientific and technological topics have been regular features of Danish public culture since the late nineteenth century (Kragh et al. 2008). More recently, public participation in science has featured prominently in Denmark ever since the first initiatives within technology assessment in the late 1970s, and, later, the founding of the Danish Board of Technology in 1985. The first consensus conference held in Denmark dates back to 1983. Today, the Danish Board of Technology Foundation operates a wide range of participatory methods, from consensus conferences to citizens’ juries and café seminars. The latest addition to the board’s method catalogue is World Wide Views, a multisite citizen participation method designed for the purpose of making global citizens consultations (Danish Board of Technology Foundation 2013).

Whereas the Danish Board of Technology puts emphasis on counseling decision makers, who are not necessarily present in the participatory event, the Copenhagen school of science cafés, like other science café organizers, stresses in situ interactions between experts and citizens. Despite such differences, both initiatives form part of what Horst and Irwin (2010) called the Danish culture of “consensus.” According to Horst and Irwin, consensus in Denmark not only refers to citizens’ and experts’ informed coconstruction of meaning about controversial science and technology issues. Historically, since the later part of the nineteenth century, consensus building in Denmark also has been closely related to nation building. Trying to maintain national integrity in a period when Denmark lost territory and faced many external threats, Danish reformists

used general-education activities and experimented with extended group decision making as a way to define a road ahead for the nascent liberal democracy.

The emphasis on what Horst and Irwin call “consensusing,” that is, the idea that the consensus-oriented dialogue and cultural ties go hand in hand, has been central to the Copenhagen school of science cafés. The crucial metaphor used in the so-called manifesto of the Danish science cafés is “bridge-building between techno-science and society” (Balling and Schuler 2002: 13). The science café is seen as a tool for enabling common understanding between the lay audience and the invited experts, but also for enabling conversations among the presenters. Although there is no explicit construction of consensus involved in the Copenhagen school of science cafés, there is an expectation of (a kind of) consensus between the representatives of science and society that are present at the event. The science cafés are expected “on the one hand to provide technoscience with a more natural place in society and culture and on the other hand to make societal and cultural issues a more natural part of technoscientific practice” (Balling and Schuler 2002: 13–14). The expected naturalness of these complex processes indicates the extent to which the organizers and the participants are embedded in the national context of consensus, in which experts and citizens are expected not only to be able to communicate on almost equal footing but also to learn from each other.

In contrast to the consensus conferences, which have an elaborate program for the coconstruction of consensus among participating citizens (Horst 2008; Joss 1998), the Copenhagen school of science cafés aims to make use of the informal social setting of the café to produce more “natural” relations between technoscience and society. It is assumed that as long as presenters and audience are given the opportunity to socialize as well as rationalize about issues and problems relating to technoscience, then they also will be able to enact a kind of consensusing, that is, to produce deliberations on science- and technology-related issues with equal emphasis on the voice of experts and citizens. The informal nature of the social situation for all participants is thought to have more or less a direct impact on the conversations that take place. While the participants, both experts and the lay audience, may not have similar interests and backgrounds, the experience of sharing the evening together and engaging in an open and equal dialogue is believed to encourage natural connections (bridges) between technoscience and society.

The Copenhagen school of science cafés, which today operates both in Copenhagen and, since 2003, in Aarhus, uses a moderator to facilitate dialogue between the invited experts and the audience. The moderator has to make sure that the experts keep to their allotted eight minutes of speaking time, and that they refrain from using technical language. Also, the moderator involves the audience at an early stage right after the experts’ introduction. Members of the audience are urged to pose critical questions to the experts and to provide their own comments on the topics of the debate. The science cafés run for about one and a half hours, which means that there usually is more than one hour for the audience to set the agenda of the deliberation. When the “official” part of the science cafés is over, the audience and the experts are encouraged to “hang out” for a while in the café to keep the informal conversation going. A good science café, the organizers conclude, has to provide the right setting for “an equal dialogue between the interested audience and experts in an unprejudiced and civilized tone” (Balling and Schuler 2002: 13).

The notion of consensusing extends to the level of national institutions, where idea that public participation in science by means of dialogue-based science communication is the responsibility of government is well established. In 2004, the Ministry of Science, Technology, and Innovation launched a program for science communication, partly based on the recommendations of a think tank on public understanding of science, appointed by the ministry itself. The think tank concluded that science communication ought to be based on dialogue and that resources should be allocated to the development of new forms of two-way science communication activities (Tænketanken for forståelse for forskning 2004). The Danish science cafés were explicitly mentioned as “an excellent example of dialogue-based events that have emerged bottom-up” (33).

Even though one of the more controversial recommendations of the think tank—allocating 2 percent of all research grants to science communication—has yet to be put into practice, the think tank’s advice generally received positive response (Nielsen 2005). In particular, the ministry used the think tank’s recommendations to launch a national campaign in which increased public understanding of—and participation in—science was seen as one of the prerequisites for boosting the legitimacy of science (Nielsen 2005). Thus, this 2004 campaign to a large extent launched “new” scientific governance in Denmark (Irwin 2006), and the Danish science cafés, which had emerged a few years before, from the beginning were seen as important elements.

The Danish science cafés have benefited from their close relations with the Danish Agency of Science, Technology, and Innovation, which is responsible for carrying out new initiatives within science communication. From 2006 onward, a small percentage (0.39 percent) of the profit from Danish Lotto funds has been reserved for science communication activities, and science cafés have received more or less continuous support from this source. (Although the percentage figure is low, the actual Lotto funds available for science communication amount to about \$1.2 million in 2014.) In 2009, the Danish science cafés also received support for convening the fourth international meeting of science café organizers. In the summer of 2014, at the request of the Ministry of Science, and again with support from Lotto funds, the Danish science cafés organized six events in the Science in the City program of the European Science Open Forum (ESOF) in Copenhagen.

Whereas the consensus conference method represents a “hard” version of the Danish consensus culture, based on the fact that the method explicitly is aimed at producing a written consensus report distributed to policy and decision makers, we would characterize the Danish science café as its “softer” sibling. The Copenhagen school of science cafés aims for another kind of consensus between science and society, namely, the “natural” embedding of science in society and, vice versa, the “natural” uptake of societal input in the sciences. As we have said, the Danish science cafés do not aim for formal consensus. Yet, the preceding dinner, the interventions of the moderator, and the call for hanging out together after the event are all directed to the establishment of smooth and easy-going relations between the audience and the invited experts in an attempt to make such relations more “natural.” Both consensus conferences and science cafés have received generous support from the Danish government, which supports the claim made by Horst and Irwin (2010) that consensus-oriented and dialogue-based science communication is seen as being part and parcel of Danish culture with strong ties to national institutions—ties that have been reinforced by the introduction of the new scientific governance in Denmark.

5 Japan: Science Cafés as Lectures with Added Coffee

Like the Danish science cafés, Japanese science cafés have profited from the introduction of the new scientific governance. The government's 2004 "White Paper on Science and Technology" noted that even though there seems to be wide agreement on the fact that science and technology benefit society, "if a suitable relationship is to be built between science and technology and society, it is important that science and technology respond appropriately to what society demands" (Ministry of Education, Sport, Science, and Technology 2004: section 1.1.1.4). Building mutual trust, while also boosting public appreciation of science and technology, were seen as key elements of this new, "suitable" relationship. The report argued that, due to increased public attention given to the level of science and technology expenditures, scientific institutions, but also individual scientists, needed to get more involved in two-way communication with members of the general public in order to achieve public accountability. Minister Takeo Kawamura, in his foreword to the white paper, stressed that scientists and engineers have "to engage in exchanges with the people so as to strengthen mutual trust, and to encourage the people to treat science and technology as issues of personal importance" (Ministry of Education, Sport, Science, and Technology 2004).

Public opinion polls performed by the Cabinet Office found that the public's interest in science and technology was declining, and particularly so among young people. Moreover, most people tended to disagree with the statement that "scientists and technologists are close and familiar people with whom I feel connected" (Ministry of Education, Sport, Science, and Technology 2004: Fig. 1-3-23). The public also indicated a lack of opportunities to learn about science and technology and to meet actual scientists. The polls showed that a majority favored the idea that the public ought to get more involved in decision making relating to science and technology. For their part, scientists responded favorably to enhancing their opportunities to do outreach activities, all of which led to the conclusion:

To maintain the accord between science and technology and society, it is important to establish science and technology governance, or a means of actively accepting the intentions of each player into discussions on policy formation, based on the premise of a dialogue and communication between the government, the scientific community, businesses, local communities, the public, and other players. Furthermore, we must call for the cultivation of science and technology communicators, outreach activities by scientists and technologists, activities by the scientific community that contribute to society, and the other efforts mentioned thus far, as the foundation upon which science and technology governance can function effectively. (Section 1.3.3)

The white paper explicitly mentioned science cafés as one of the ways in which "scientists and technologists [should] get out into society and speak with the public" (Ministry of Education, Sport, Science, and Technology 2004: section 1.3.3.2). It was recognized that science cafés had emerged in Western countries, where the scientific community was more used to taking part in public deliberations on science and technology. In building the new relationship between science, technology, and society in Japan, "a uniquely Japanese form must be sought, based on Japan's institutions, social

structure, and culture, while continuing to draw upon the examples of nations with long science histories, such as those in the West” (section 1.3.3.3). Still, dialogue was seen as the best way to build trust by having “scientists and technologists . . . share the needs of the public and come to recognize the public’s doubts and misgivings about science and technology” and by getting the public to “sympathize with the dreams and aspirations of scientists and technologists” (section 1.3.2.1).

The white paper’s section on science cafés was based on a report prepared by young STS scholars (Kobayashi et al. 2004). The group had conducted a survey of the British *Café Scientifique* format, presenting it as “a new ‘sexy’ interface between science and society” (Kobayashi et al. 2004). Although the group generally was favorable to the introduction of science cafés into Japanese culture, they also raised some concerns about the possibility of having experts and laypersons engaging in an equal discussion. In other words, what Norton and Nohara (2009) later called the “culture of respect” for expert authority might be conceived as a barrier to the proper functioning of science cafés. However, referring to the experiences gained in staging consensus conferences in Japan, where experts and laypersons had been reported to engage in a lively debate, the group concluded that anecdotal evidence also could be used to claim that science cafés would work just fine in Japan. The group therefore recommended that science cafés be adopted by scientific institutions and others in order to secure funding for actual science cafés and networking activities among organizers (Kobayashi et al. 2004: 19–20).

Nakamura (2010) argues that the STS community in Japan has been particularly concerned with science communication. As mentioned above, STS scholars were instrumental in introducing the consensus conference method in Japan, and, as we have just seen, the same goes for science cafés. In 2004, the STS group responsible for the “new ‘sexy’ interface” report, supplemented by Masaki Nakamura, launched the *Café Scientifique Tokyo*, which is still in operation. The organizers shared the concern of many Japanese STS scholars that science cafés would end up being taken over by the scientific establishment as part and parcel of their promotion of science and technology. To them, the 2004 white paper seemed to indicate that this was about to happen (Nakamura 2010).

Adopting the British format with just one speaker, the *Café Scientifique Tokyo* was to be a countermeasure to institutionalized outreach activities: a small-scale event, free of charge, primarily featuring younger researchers, who in an informal and open atmosphere would present their research with the use of no technical equipment such as microphones and PowerPoint slides. Usually, no more than twenty people attend the *Café Scientifique* in Tokyo, which means that the events can take place at one long table in the corner of the café during normal opening hours. Typically, the presenter and the audience are all situated around the table as ordinary guests. The presenter usually speaks for about twenty minutes or so. Then, there is a discussion moderated by one of the organizers. Sometimes, in order to emphasize the dialogue-based approach, events begin with an interview with the invited expert, conducted by the moderator and allowing for all participants to intervene with questions and comments. The format, with all participants situated at eye level and around the same table, was chosen in order to enable a symmetrical relationship between the scientists and the participants and to facilitate dialogue.

Partly because of their STS background, the *Café Scientifique Tokyo* organizers were concerned about the societal dimensions of science and technology. They

contextualized some of their science café events in terms of current public concerns about science and technology. For example, the very first two science cafés took up chemical marine pollution and the asbestos problem. It was believed that the science café format was a good place in which to stimulate dialogue between scientists and citizens about such socio-scientific issues. Another early topic was the *nattō* diet, a traditional Japanese food made from soybeans fermented with *Bacillus subtilis*. In 2007, a popular Japanese TV show called *Aru Aru Daijiten (Encyclopedia of Living)* produced a *nattō* diet fad across the nation, and the Café Scientifique Tokyo team wanted to bring scientific knowledge into the ongoing public debate.

Besides organizing regular science cafés, the STS group also tried to mobilize a network of people interested in doing science cafés. They launched a mailing list, wrote papers, gave presentations, and organized symposia for potential science café organizers. In effect, they wanted to nurture a “science café movement” in Japan, emphasizing “the link between the science café movement and public engagement in science and technology.” They warned against using science cafés as just another “sophisticated public understanding of science tool in Japan.” Science cafés, according to the “designers” of the science café movement, unintentionally echoing the new scientific governance endorsed by the government, were to open up “new possibilities for science and society” (Nakamura 2010: 150).

At the same time, based on the recommendations of the 2004 “White Paper on Science and Technology,” the government and many scientific institutions also were taking action. In 2005, science communication was adopted as a formal part of the national science and technology policy, three major universities initiated science communication courses, and two leading national science museums launched training programs. These events have led Kobayashi (2007: 18) to declare 2005 the “First Year of Japanese Science Communication.” In 2006, the encouragement of science communication was explicitly advocated in the “Third Science and Technology Basic Plan for 2006–2010” (Council for Science and Technology Policy 2006).

The 2004 white paper pointed out that the Council for Science and Technology Policy, established in 2001 to contribute to science policy making, promote scientific collaboration (nationally as well as internationally), and enact two-way communication between science and the public, had been criticized for having too little impact on actual policies and on public relations of science (Ministry of Education, Sport, Science, and Technology 2004: section 1.3.3.1). In order to meet its obligations to society, the council then launched a nationwide initiative, with twenty-one science cafés being set up during the 2006 Science and Technology Week. This initiative not only served to spread knowledge about science cafés around Japan but also lent official legitimacy to the concept.

Since 2006, the science café movement in Japan has been—and still is—dominated by institutional actors based in research and development. Along with the STS-based science café movement, universities, research institutions, and government bodies have been prime movers in setting up science cafés in Japan, and universities and research institutions still remain the main players in the field of science cafés in Japan (Nakamura 2010). Even though local, noninstitutional initiatives like Café Scientifique Tokyo operate at the grassroots level, most Japanese science cafés are firmly embedded in institutional outreach programs.

The spread of science cafés in Japan has been remarkable. Compared to European countries like the UK, France, and Denmark, Japanese science cafés are highly diverse. There is no such thing as a “Japanese-style” science café. Moreover, the integration of science cafés into the Japanese culture of science communication has proceeded at a rapid pace. An unpublished survey in 2008 showed that more than eleven hundred science cafés were held in Japan in the period from October 2004 to December 2007 (Matsuda and Kato 2008). Most of these events take place in public places such as cafés, bars, and public institutions. Universities, research institutions, volunteer groups, and nongovernmental organizations were the most frequent organizing bodies. The authors of the above-mentioned survey divided Japanese science cafés into three categories, with the two former ones being adopted by most organizers:

- Lecture-style café: one speaker gives a short lecture on his or her research topics, followed by a question-and-answer session.
- Interchange-style café: one speaker gives a short lecture on his or her research topics, followed by a question-and-answer session and/or a chance for hands-on experiences and social interaction with the speaker.
- Discussion-style café: one or several speakers give(s) a short, topical introduction, followed by discussion and debate.

Observing that discussion-style cafés are rare in Japan, Matsuda and Kato (2008) concluded that few Japanese science cafés facilitate discussions between experts and the public; rather, the majority of science cafés in Japan are organized as traditional public lectures, some with a touch of hands-on activity included. Other science cafés aim to provide room for discussions among peers; others again to mediate partnerships between universities and industry.

6 Science Cafés in Context

Science cafés have become a regular part of the science communication “landscape” in many countries. Science cafés typically are seen as a way in which to enact informal, two-way communication between invited experts and a smaller, self-selected audience. The movement forms part of a wider participatory trend, which has impacted science as well as STS and scientific governance. Science cafés all around the world have received considerable institutional support, and support has been given to promote an international community of science café organizers, allowing science cafés to emerge in many different contexts. This article has traced the international network of science café organizers and described science cafés in Denmark and Japan.

In 1999, Duncan Dallas, founder of Cafés Scientifiques, stated that there is no hidden agenda to defend or sell science, and that people simply want to be able to participate in the discussion on an equal footing with the experts (see quote above). We have found that, in Denmark as well as in Japan, science cafés, with important input from scholars more or less connected to STS, have started as a bottom-up initiative to stimulate new relationships between experts and members of the public, but then were quickly adopted by the respective governments and, in the case of Japan, scientific institutions as part of the new scientific governance based on ideas about public participation in science as a means to boost public legitimacy of science.

In Denmark, the “discussion-style” science cafés promoted by the Copenhagen school organizers were easily accepted as a way to stimulate dialogue-based science communication and as part of the existing culture of consensusing about science, technology, and society. There are no other science café formats in regular use in Denmark. In Japan, government initiatives also supported the spread of science cafés and authorized the use of science cafés as an integral part of the scientific institutions’ outreach program that, today, is the most widespread format. Japanese science cafés have grown rapidly in numbers and most have adopted the “lecture-style” format, partly owing to accommodation of science cafés into institutional outreach. In Denmark, there is just one small science café network, based in Copenhagen and Aarhus.

The heterogeneous international network of science café organizers has served to spread ideas about science cafés to people all around the world, making science cafés an integral and lively part of the “great societal conversation about science” (Bauer, Shukla, and Allum 2012: 1). The network has attracted STS scholars with an interest in promoting public participation in science activities. Science cafés, from this perspective, are closely affiliated with other participatory activities such as consensus conferences. A somewhat “softer” version of participatory deliberation than consensus conferences, science cafés aim for public participation in science through dialogue in informal settings. In contrast to the consensus conference method, the science café format is based on open conversations and no formalized impact on actual decision making. It may be argued that science cafés, by taking a more loose and undirected approach to participation, have very little impact outside the cafés in which the events take place, but it falls outside the scope of this article to pursue this argument.

We have traced the emergence and development of science cafés in two different national contexts, namely, Denmark and Japan (see Table 1). In both countries, the rise of the science café movement was made possible by social networking and by mobilizing STS-oriented concerns, but also by the introduction of the new scientific governance (Irwin 2006). Around 2003, the Danish and the Japanese governments each launched separate programs to further public participation in science as a means of legitimizing public investments in science and technology and stimulating interest in the sciences and in higher education. The think tank appointed by the Danish government in May 2003 introduced the notion of two-way science communication based on dialogue, promoting the Danish science cafés as one of the ways to enact dialogue between scientists and members of the public. The Japanese government, along similar lines, in its 2004 white paper emphasized public participation in science as a way of reforming scientific institutions and building a new relationship between science and the general public. Science cafés also were explicitly mentioned in the white papers, thanks to STS scholars.

The main differences between the Danish and the Japanese science café experiences relate to different cultures of public deliberation and different institutional settings. First of all, many documents about science cafés in Japan mention that there is a cultural barrier for public debates between experts and laypersons, the so-called culture of respect, according to which people generally respect authorities and refrain from asking (critical) questions in public. Based on our own experiences with Japanese science cafés, we believe that this idea is too stereotypical. Many people refrain from asking critical questions—this happens all the time in science cafés all

Table 1 Summary of Major Findings

Science Cafés	Denmark	Japan
Distinguishing features	<ul style="list-style-type: none"> • French-style science cafés with a moderator and a panel of speakers (including nonscientists) • Preceding dinner with speakers and moderator • Aims to “build bridges between technoscience and society” by providing technoscience with a “natural” place in society and social issues with a “natural” place in technoscientific practice 	<ul style="list-style-type: none"> • Lecture-style and interaction-style cafés, partly based on the British Cafés Scientifiques • Discussion-style cafés, based partly on the French (and Danish) format • High degree of diversity, compared to other countries • Lecture-style cafés organized by scientific institutions are predominant
Actors involved	<ul style="list-style-type: none"> • Science café organizers, affiliated with STS • Ministry of Science, Technology, and Innovation, offering financial and political support 	<ul style="list-style-type: none"> • Science café organizers, some of whom are affiliated with STS; most, however, represent scientific institutions • Ministry of Education, Sport, Science, and Technology, providing political support • Council for Science and Technology Policy, sponsoring and promoting science cafés
Cultural expectations	<ul style="list-style-type: none"> • Public deliberations on science and technology are easy and smooth • Dialogue between experts and citizens is informal and equal (critical questions are inherent to the deliberation) • Public participation in science and technology is embedded in national culture of deliberation 	<ul style="list-style-type: none"> • Lack of understanding between experts and citizens • Citizens show deep respect for scientific expertise (and refrain from asking critical questions); experts not used to accepting input and criticisms from citizens • Public participation in science and technology is a new idea to experts and citizens alike
Government support (new scientific governance)	<ul style="list-style-type: none"> • 2004 campaign to promote science communication and stimulate public appreciation of science and technology • Government think tank recommends dialogue-based science communication (Danish science cafés are mentioned as “an excellent example”) • Allocation of Lotto funds to science cafés since 2006 	<ul style="list-style-type: none"> • 2004 white paper on science and technology promotes science cafés as a new, “sexy” science-society interface that will help to build trust between experts and citizens • 2006 nationwide science café initiative by the Council for Science and Technology Policy

around the world. Sometimes, not asking critical questions may be due to (excessive) respect, but there are probably also many other reasons. We accept that the “culture of respect” is a strong idea among science café organizers, especially in Japan, yet we remain skeptical as to its effects in real science cafés. We would hypothesize that expectations of this particular cultural trait may in fact become a self-fulfilling prophecy, as organizers use it as a way to support a lecture-style format.

Similarly, it is easy to get wrong ideas about the impact of the Danish culture of consensus. It is not the case that science cafés in Denmark are “naturally” oriented toward consensus formation, nor is it true that Danish science cafés are a “natural” setting for science in society. We prefer to see “consensusing” as part of the expectations of the science cafés on the part of organizers, decision makers, experts, and the audience. Funding, organizing, and attending science cafés, people expect to see participatory democracy in action, and, so, this is what they are going to get. As Horst (2008) said of the consensus conference method, science cafés have interpretative flexibility, which means that they can be used for many different purposes and may be understood in many different, not entirely identical ways. The embedding of one type of science café, namely, discussion-style science cafés, in Danish culture is a sign that there is wide consensus about what kind of dialogues about science would be relevant to have, rather than a precise description of what is actually going on. In other words, we suggest that “consensusing,” like “respecting,” operates at the level of cultural expectations as to what is a science café; it has little explanatory power when it comes to the actual enactment of science café events.

Science cafés, as a mode of public participation in science, are flexible and may easily be adapted to different contexts. Tracing the emergence and institutionalization of science cafés in Denmark and Japan, we have documented links between science cafés and STS, but also close connections to the new scientific governance based on ideas about public participation in science. Science cafés can be used to promote different kinds of agendas: from enhancing public legitimacy of science to raising critical questions about science’s relevance for society and—vice versa—society’s relevance for science. The openness and the flexibility of the science café format means that it is readily adapted for specific purposes. The introduction of science cafés in countries all around the world has pushed public participation in science, although the very meaning of science cafés will have to be negotiated in specific contexts. Sipping science in a science café seems easy and appears attractive to many actors engaged in public communication of science and technology; still, as we have shown in the Danish and Japanese contexts, sipping science has many meanings and to a large extent depends on cultural expectations and institutional support.

References

- Balling, Gert, and Emmanuelle Schuler (2002). *Videnskabscaféen: Videnskab, kunst og kultur (The Science Café: Science, Art, and Culture)*. Højbjerg, Denmark: Hovedland.
- Bauer, Martin W., Rajesh Shukla, and Nick Allum, eds. (2012). *The Culture of Science: How the Public Relates to Science across the Globe*. New York: Routledge.
- Bucchi, Massimiano, and Federico Neresini (2008). Science and Public Participation. In *Handbook of Science and Technology Studies*, edited by Edward J. Hackett, Olga Amsterdamska, Michael Lynch, and Judy Wajcman, 449–72. Cambridge, MA: MIT Press.

- Callon, Michel, Pierre Lacommes, and Yannik Barthe (2009). *Acting in an Uncertain World: An Essay on Technical Democracy*. Cambridge, MA: MIT Press.
- Castelfranchi, Yuri (2004). Science Communication around the World: Eyes on Brazil. *Journal of Science Communication* 3, no. 4 (<http://jcom.sissa.it/archive/03/04/F030401/>).
- Chen, Dung-Seng, and Ghia-Ling Wu (2007). Introduction: Public Participation in Science and Technology in East Asia. *East Asian Science, Technology and Society* 1, no. 1: 15–18.
- Collins, Harry M., and Robert Evans (2007). *Rethinking Expertise*. Chicago: University of Chicago Press.
- Council for Science and Technology Policy (2006). Science and Technology Basic Plan (FY2006–FY2010) (<http://www8.cao.go.jp/cstp/english/basic/>, accessed 16 July 2014).
- Dallas, Duncan (1999). The Cafe Scientifique. *Nature* 399, no. 120: 120.
- Dallas, Duncan (2006). Cafe Scientifique—Deja Vu. *Cell* 126, no. 2: 227–29.
- Danish Board of Technology (2006). The Consensus Conference (<http://www.tekno.dk/subpage.php3?article=468&toppic=kategori12&language=uk>, accessed 22 September 2014).
- Danish Board of Technology Foundation (2013). Methods (<http://www.tekno.dk/subpage.php3?survey=16&language=uk>, accessed 22 September 2014).
- Deng, Chung-Yeh, and Chia-Ling Wu (2010). An Innovative Participatory Method for Newly Democratic Societies: The “Civic Groups Forum” on National Health Insurance Reforms in Taiwan. *Social Science and Medicine* 70, no. 6: 896–903.
- Einsiedel, Edna F. (2008). Public Participation and Dialogue. In *Handbook of Public Communication of Science and Technology*, edited by Massimiano Bucchi and Brian Trench, 173–84. London: Routledge.
- Einsiedel, Edna F., Erling Jelseo, and Thomas Breck (2001). Publics at the Technology Table: The Consensus Conference in Denmark, Canada, and Australia. *Public Understanding of Science* 10, no. 1: 83–98.
- Evangelista, Rafael, and Marta Mourão Kanashiro (2004). Science, Communication, and Society in Brazil, the Narrative of Deficit. *Journal of Science Communication* 3, no. 4 (<http://jcom.sissa.it/archive/03/04/F030403/>).
- Grand, Ann (2007). Cafe Scientifique Organisers’ Conference 2007 (<http://www.cafescientifique.org/attachments/article/263/conference%20report.pdf>, accessed 22 September 2014).
- Greco, Pietro (2004). Towards a “Mediterranean Model” of Science Communication. *Journal of Science Communication* 3, no. 3 (<http://jcom.sissa.it/archive/03/03/F030304/>).
- Higashijima, Jin, Kae Takahashi, and Kazuto Kato (2009). Mouse Model: What Do Japanese Life Sciences Researchers Mean by This Term? *Journal of Science Communication* 8, no. 1 (<http://jcom.sissa.it/archive/08/01/Jcom0801%282009%29A01>).
- Horlick-Jones, Tom, John Walls, Gene Rowe, Nick Pidgeon, Wouter Poortinga, and Tim O’Riordan (2006). On Evaluating the GM Nation? Public Debate about the Commercialisation of Transgenic Crops in Britain. *New Genetics and Society* 25, no. 3: 265–88.
- Horst, Maja (2008). In Search of Dialogue: Staging Science Communication in Consensus Conferences. In *Communicating Science in Social Contexts*, edited by Donghon Cheng, Michel Claessens, Toss Gascoigne, Jenni Metcalfe, Bernard Schiele, and Shunke Shi, 259–74. Berlin: Springer Science + Business Media.
- Horst, Maja, and Alan Irwin (2010). Nations at Ease with Radical Knowledge: On Consensus, Consensusing, and False Consensusness. *Social Studies of Science* 40, no. 1: 105–26.
- Horst, Maja, and Mike Michael (2011). On the Shoulders of Idiots: Re-thinking Science Communication as “Event.” *Science as Culture* 20, no. 3: 283–306.
- Irwin, Alan (2006). The Politics of Talk: Coming to Terms with the “New” Scientific Governance. *Social Studies of Science* 36, no. 2: 299–320.
- Irwin, Alan, Torben E. Jensen, and Kevin E. Jones (2013). The Good, the Bad and the Perfect: Criticizing Engagement Practice. *Social Studies of Science* 43, no. 1: 118–35.
- Joss, Simon (1998). Danish Consensus Conferences as a Model of Participatory Technology Assessment: An Impact Study of Consensus Conferences on Danish Parliament and Danish Public Debate. *Science and Public Policy* 25, no. 1: 2–22.
- Juraku, Kohta, Tatsujiro Suzuki, and Osamu Sakura (2007). Social Decision-Making Processes in Local Contexts: An STS Case Study on Nuclear Power Plant Siting in Japan. *East Asian Science, Technology and Society* 1, no. 1: 53–75.
- Kerr, Anne, Sarah Cunningham-Burley, and Richard Tutton (2007). Shifting Subject Positions: Experts and Lay People in Public Dialogue. *Social Studies of Science* 37, no. 3: 385–411.
- Kobayashi, Shinichi, Thomas E. Hope, Minako Kusafuka, and Akiko Morozumi (2004). 科学技術と社会の楽しい関係: イギリス編 (Café Scientifique: A New “Sexy” Interface between Science and

- Society). CTS-WP-2004-02. Working paper, National Institute of Advanced Industrial Science and Technology.
- Kobayashi, Tadashi (2007). *トランス・サイエンスの時代—科学技術と社会をつなぐ (The Age of Trans-Science: Bridging Science, Technology, and Society)*. Tokyo: NTT.
- Kragh, Helge, Peter C. Kjærgaard, Henry Nielsen, and Kristian H. Nielsen (2008). *Science in Denmark: A Thousand-Year History*. Aarhus, Denmark: Aarhus University Press.
- Leach, Melissa, Ian Scoones, and Brian Wynne, eds. (2005). *Science and Citizens: Globalization and the Challenge of Engagement*. London: Zed Books.
- Matsuda, Kentaro, and Kazuto Kato (2008). Current Situation and Future Challenges for Science Cafés in Japan (unpublished paper, available from the authors).
- Mazzonetto, Marzia (2005). Science Communication in India: Current Situation, History, and Future Developments. *Journal of Science Communication* 4, no. 1 (<http://jcom.sissa.it/archive/04/01/F040101/>).
- Mejlgaard, Niels, Carter Bloch, Lise Degn, Tine Ravn, and Mathias W. Nielsen (2012). Monitoring Policy and Research Activities on Science in Society in Europe (MASIS): Final Synthesis Report (http://ec.europa.eu/research/science-society/document_library/pdf_06/monitoring-policy-research-activities-on-sis_en.pdf, accessed 22 September 2014).
- Ministry of Education, Sports, Science, and Technology (2004). White Paper on Science and Technology 2004. Science and Technology in the Future (<http://www.mext.go.jp/english/whitepaper/1302285.htm>, accessed 22 September 2014).
- Nakamura, Masaki (2010). STS in Japan in Light of the Science Café Movement. *East Asian Science, Technology and Society* 4, no. 1: 145–51.
- Nielsen, Kristian H. (2005). Between Understanding and Appreciation: Current Science Communication in Denmark. *Journal of Science Communication* 4, no. 4 (<http://jcom.sissa.it/archive/04/04/A040402/>).
- Nishizawa, Mariko (2005). Citizen Deliberations on Science and Technology and Their Social Environments: Case Study on the Japanese Consensus Conference on GM Foods. *Science and Public Policy* 6, no. 6: 479–89.
- Nishizawa, Mariko, and Ortwin Renn (2006). Responding to Public Demand for Assurance of Genetically Modified Crops: Case from Japan. *Journal of Risk Research* 9, no. 1: 41–56.
- Norton, Michael, and Kayoko Nohara (2009). Science Cafés: Cross-Cultural Adaption and Educational Applications. *Journal of Science Communication* 8, no. 4 ([http://jcom.sissa.it/archive/08/04/Jcom0804\(2009\)A01/](http://jcom.sissa.it/archive/08/04/Jcom0804(2009)A01/)).
- Pitrelli, Nico (2005). The New “Chinese Dream” Regards Science Communication. *Journal of Science Communication* 4, no. 2 (<http://jcom.sissa.it/archive/04/02/F040201/>).
- Riise, Jan (2008). Bringing Science to the Public. In *Communicating Science in Social Contexts: New Models, New Practices*, edited by Donghong Cheng, Michel Claessens, Toss Gascoigne, Jenni Metcalfe, Bernard Schiele, and Shunke Shi, 301–9. Berlin: Springer Science + Business Media.
- Tænketanken for forståelse for forskning (Think Tank for Public Understanding of Science) (2004). *Forsk og fortæl (Do Your Research and Tell People about It)*. Copenhagen: Ministry of Science (<http://ufm.dk/publikationer/2004/forsk-og-fortael>, accessed 22 September 2014).
- UNESCO (1998). The Role of Science and Technology in Society and Governance: Toward a New Contract between Science and Society. Science for the Twenty-First Century: A New Commitment (http://www.unesco.org/science/wcs/meetings/eur_alberta_98_e.htm, accessed 22 September 2014).
- Wakamatsu, Yukio (1999). A Citizens’ Conference on Gene Therapy in Japan: A Feasibility Study of the Consensus Conference Method in Japan. *AI and Society* 13, nos. 1–2: 22–43.

Kristian H. Nielsen is associate professor at the Centre for Science Studies at Aarhus University. His professional interests include science communication and science and technology studies. He has organized science cafés on a regular basis in Aarhus since 2003. In 2008 and 2012, respectively, he visited Osaka University and the Tokyo Institute of Technology on short-term research stays.

Gert Balling is senior adviser at the University of Copenhagen. He is working in the field of technology transfer and science communication and has chaired the Danish Science Cafés since 2001. He visited Hokkaido University in 2006 and Osaka University and the Tokyo Institute of Technology in 2011.

Tom Hope is an associate professor in the International Student Center at Tokyo Institute of Technology. He moved to Japan from the UK in 2003 after conducting research for his doctorate in sociology at

the University of York. His recent research uses qualitative methodologies to study human-computer interaction, contemporary forms of community, and the internationalization of science and engineering higher education in Japan.

Masaki Nakamura is associate professor at Osaka University. He is working in the field of history of technology, research integrity, and science communication. He has been deeply engaged with the Japanese science café movement since 2005, and he has contributed to the diffusion of science cafés in Japan.

