

Globalisation of Science Communication

This issue of the *Journal of Scientific Temper* brings together the talks given during the seminar entitled ‘Debating Science Culture: Rethinking the Conservation’ that took place in Metz (France) under the auspices of the University of Lorraine in January 2014. The aim of this seminar was to reflect upon the evolution of the debate on science communication by 1) breaking with the conventional wisdom about the need to promote and valorize scientific culture, and 2) by confronting different approaches pursued by researchers coming from different intellectual and cultural backgrounds in order to achieve this breakthrough. From this confrontation of different approaches we wanted to create the proper setting for a conversation about contemporary perspectives on contemporary issues to take place. Researchers from Canada, China, India, France, the United Kingdom and Switzerland were invited to attend and share their vision of science communication.

Two main reasons push us to rethink conventional public science communication.

First, the valorization of scientific culture is once again the talk of the day. And Europe is very active with its Horizon 2020 program. This program, tailored to the different national contexts of European Union member states, aims to remobilize society around science and technology issues: to this end, according to the French version of Science with and for Society, a ‘fruitful and rich’ dialogue must be fostered in order to sustain an ‘active collaboration between science and society’ leading to ‘a more responsible science and the drafting of more relevant policies for citizens’ (Horizon, 2020). The ultimate goal is to ‘recruit new talent for science and to pair scientific excellence with social awareness and responsibility’ (Horizon 2020, work programme).

Canada is also active on this front. The Council of Canadian Academies set up an expert committee that worked relentlessly for nearly two years in order to provide an accurate image of the state of scientific culture in Canada (Science Culture, 2014). What needs to be stressed is not the result at which it arrived, but the renewed importance of science communication in Canada after being mothballed¹. Recently, Australia also wished to have an accurate picture of the state of science culture, especially by assessing its engagement activities (NAASEA, 2012). We can also mention Korea which recently sought an idea of the state of science culture elsewhere in order to better assess its own activities (Schiele *et al.*, 2011). Thus, there, truly, is a renewed interest for science communication. It is this renewed interest that must be addressed. We could briefly recall that effervescence of the 1980s, which led a number of countries to draft national policies aimed at the valorization of science communication, was initiated by the OECD. As it has been previously shown, the interest for science communication as a means of bridging the gap between society or the general public and science follows a cyclical motion (Schiele, 2007). What interested us during this seminar was the specificity, if any, of this new cycle of renewed interest in relation to the effects of globalization and of the generalized access to Internet on the discourses and practices of the diffusion of science.

We live in an age of accelerating change, of the integration of globalization and communication, and it is in this context that the renewal of science communication must be rethought. Globalization today can only be sustained by the ever increasing speed of the development of communication technologies, just as globalization brings about a new age of information, the 'network society' (Castells, 2009). In this context, science communication is radically transformed through the reorganization of mediation schemes; the emergence of new

¹ Canada for all purposes mothballed its policy for the promotion of scientific culture by putting an end to *Science and Culture Canada* in 1999; the Province of Quebec, which had in the past actively promoted scientific culture, unflinchingly acknowledged the closing of the *Société pour la promotion de la science et de la technologie* in 2011, an organization that was mainly funded by the provincial government. See, Schiele B & Landry A (2012). The Development of Science Communication Studies in Canada, in Schiele B, Claessens M and Shi S (ed.). *Science Communication in the World*, Springer, p. 33-63.

modes of knowledge diffusion, and the transformation of the role of actors.

Public science communication was built upon the consensus around the need to enlighten public opinion on issues regarding science and crystallized around a number of professional practices aimed to ensure its — relative — independence and autonomy in achieving this objective. However, the context is radically different today: neither science journalists nor science communication professionals can claim the monopoly of legitimate public science discourse; they are only a sub-type of mediators among a growing body of mediators. Internet radically changed the rules of the game by ensuring the rapid worldwide diffusion of any piece of information, thus giving credence to the idea that anyone can be a science mediator. This is without a doubt the consequence of the accelerating development and penetration of the means of the communication within society. This transformation is deep because the means of communication are all-pervading, long lasting because it affects all professional practices, and structural because it is irreversible.

Cyberculture rests upon three major properties of the Internet: browsing abolishes the space and time constraints of traditional writing modes, hypertext links enable ‘a permanent and retroactive looping of posted information’ and a multiplication of now ‘permanent and retroactive’ interactions between producers and consumers of information ‘from any node of the communication network’ (Weissberg, 1999). This cyberculture leads to the emergence of new mediation actors and to the marginalization of more traditional ones (Dalhgreen, 1999). The diversification of the means of communication enables the emergence of new actors dedicated to the diffusion of scientific news from the fully committed scientist to the passionate amateur. Thus multiplying the number of sources and challenging conventional science mediation (Trench, 2007). There are today more producers of science news than there are professional mediators, including professional science journalists, thus blurring the boundaries between professions. If traditional science mediation was aimed at a public, whether intentionally split or not, the new communication regime tends to

link specialized interest groups to foster such regrouping and, of course, benefit from it.

We could even posit that these questions are taking place in the context of a wider transformation of the application of knowledge. Thus, with the impact of the Internet, a specialized information aimed at professionals is accessible by the general public, or at least interested laypersons. Promotional materials, advertisement, marketing, services, reports, public information, directories and so on coexist in a pell-mell and intricate fashion. This point must be stressed since online searches are done through generalized search engines and that media are diversifying at the speed of the diversification of Internet usage by Internet users (portals, *e-zines*, forums, personal web pages, discussion groups, address lists, blogs and so on). In any case, anything aimed at the few is rapidly accessible to all. In this generalized communication and exchange system, it is nearly impossible to ensure that the information was checked beforehand by peers or ensure that consumers will check its sources, a time- and resource-consuming process. An example among countless others: in 2014, Springer publishing and the Institute of Electrical and Electronic Engineers (IEEE) retracted 120 publications after a researcher demonstrated they were computer-generated (Noorden, 2014). We are living a paradigm change: information becomes a value in itself, a resource and a commodity — in short, an engine of globalization — leading to the establishment of the so-called *information society*. From this stems another consequence: the once closed border between science and society is opening up. It was by monopolizing public science communication that science journalists and professional mediators managed to close the border. However, the recent arrival of new actors forced it open, challenging the legitimacy of their monopoly. As a result, contemporary society is characterized by pluralism and diversity, as well as by growing complexity and uncertainty (Friedman *et al.*, 1986). And both scientists and science communication actors are carried by and are a part of this movement.

Secondly, what distinguishes this renewal of interest is the new dynamic in which it takes place. In short, societies that were relegated on the margins until recently because of their

negligible economic weight have become unavoidable partners. China, India and also Brazil come to mind. The issues that they face opened new axes of research. They made issues of local knowledge, indigenous knowledge, common knowledge and shared knowledge, in contrast with specialized knowledge, areas of research in their own rights. Of course, we do not imply that the question of the hierarchy of knowledge or of the borders between these knowledge was never raised, pioneer works of Brian Wynne among others speak to the contrary (Irwin and Wynne, 1996). Yet, by taking into account their own context, these countries first introduced new research topics and secondly rethought the relationship between science and society and the modes of diffusion and appropriation of knowledge at a scale hardly conceivable by its initiators.

As a consequence², another aspect must be reflected upon: the society we live in is often called complex, in reference to the growing reciprocal interdependency of individuals of which no one and no regrouping can successfully claim to be its center. Of course, some groups — truly networks of individuals — have a greater influence at times, yet they are ‘linked in multiple ways such that they form interdependent associations’ (Elias, 1991). This interdependency is manifested anew every time a break in the balance of the groups happens, because it reverberates through the whole social body. To put it simply, our modernity has come to realize the nature of this interdependency and of the risks that breaks in the balance pose on it. Such a realization is unprecedented! This is why collaboration, participation, dialogue, etc. are the words that come back most often when major changes are anticipated. This applies every time what is at stake is the communication of science and technology, because they are always aimed at the public. This is why, nowadays, all through a reflection process, from its very beginning, a diversity of social actors are associated. This is consistent with a growing demand for more inclusive democracy.

² This paragraph is taken from Science, Public Engagement, Citizenship in 21st Century, an address given at the: Public engagement for good governance: the role of the Humanities, Human and Social Dynamics (HSD) Research Seminar series, DST, HSRC, MISTRA, Pretoria, March 11, 2015.

In short, compared to previous periods of renewed interest, the present renewed interest for science communication and the willingness shown towards its valorization takes place in a radically different context. This context raises new questions and opens new axes of research at the very moment when societies are increasingly mixing, a process which tears down traditional structures. This seminar wanted to initiate a conversation on this deep transformation, a conversation that this issue of *Journal of Scientific Temper* aims to prolong.

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