

The quest for scientific culture

**Reviewed
Conference**

14TH INTERNATIONAL SUMMER SCHOOL OF MIND, BRAIN AND EDUCATION (ISMBE),
ETTORE MAJORANA CENTRE FOR SCIENTIFIC CULTURE, ERICE (SICILY), ITALY,
1–4 OCTOBER 2019

Reviewed by

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Abstract

What exactly is “scientific culture”? How does it relate to science communication, non-formal education or artistic interactions with the scientific world? That was the topic of the 14th International Summer School of Mind, Brain and Education (ISMBE), held 1–4 October 2019 at the Ettore Majorana Centre for Scientific Culture in Erice (Sicily), Italy. The ISMBE has a long history of bringing together researchers from diverse fields to catalyze research relating to cognitive science and neuroscience through to education, and the directors of the School, Drs. Kurt Fischer, Antonio Battro and Sebastián Lipina considered that the boundary between these fields and scientific culture was subtle enough to demand a conference on the subject and asked us to organize such a meeting.

Keywords

Informal learning; Science and technology, art and literature; Science centres and museums

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Indeed, the concept of scientific culture has come of age in recent years, and has been extensively discussed by scholars, researchers, communicators and decision makers, in areas that range from science education to communication and appropriation of scientific capital by individuals and society [e.g. Feuer, Towne and Shavelson, 2002; Godin and Gingras, 2000; Paisley, 1998; Schiele, 1994]. The notion of scientific culture — which sometimes overlaps with the fields of public understanding of science and science literacy - also expands into the development of non-formal venues such as science and technology museums and centers and even into the relationship between the sciences and the arts. Moreover, there are also diverse proposals on how to “measure” scientific culture by means of several indicators that vary substantially across authors and regions [Godin and Gingras, 2000]. However, in spite of the lack of a common definition, there is an

understanding that scientific culture is a desirable aim. It is clear that scientific culture should promote science literacy, and in turn support a better quality of life.

How might we define scientific culture? Do we include the scientific knowledge that arose in the seventeenth and eighteenth centuries, leading to the industrial revolution? Or the appropriation of scientific thinking by the general population? What about the role of science in economic and social growth and well-being? Do businesses apply scientific culture when aiming at innovation and creativity? And how does scientific culture relate to the notions of public understanding of science and scientific literacy?

With these questions in mind we gathered together a dream team of scholars, communicators, educators and artists who not only presented their views and specific actions on scientific culture, but also discussed the foundations and definitions of the concept.

Much to our surprise, some of the great experts in the field immediately accepted our invitation, and we organized a program around the following topics:

- What is scientific culture? Actions in search of a common definition
- How does the science-art incestuous relationship contribute to the development of scientific culture?
- Which public and institutional policies have proven successful — or not — in terms of scientific culture for society?
- What is the role of formal and non-formal education in the development of scientific culture?

The science communication approach to scientific culture was brilliantly presented by Emma Weitkamp (UWE Bristol, U.K.), Jennifer Metcalfe (Econnect Communication, Australia) and Toss Gascoigne (Australian Science Communicators, Australia), with additional insight by Marina Joubert (Center for Research on Evaluation, Science and Technology, South Africa) and Sergio de Regules (DGDC, UNAM, Mexico). Concepts as battlegrounds, scientific immersion, the communicator as a traitor (“comunicatore traditore”) and trends in modern SciComm floated in the cloisters we used as meeting rooms. In addition, Bernard Schiele (Université du Québec à Montréal, Canada) illuminated us on how to express what one wants to express and Massimiano Bucchi (University of Trento, Italy) introduced the innovative concept of ‘Culture of Science in Society’.

Science education was one the main topics arising when searching for the roots of scientific culture. While John Falk and Lynn Dierking (Oregon State University, United States) heralded self-choice education as one of the pillars for acquiring such culture, Helen Jones (Science Museum, United Kingdom) and Sebastian Lipina (CEMIC-CONICET, Argentina) showed practical examples from science museums evidencing that institutional decisions can lead to meaningful experiences for the visitors. Moreover, critical thinking and storytelling were championed by Elena Pasquinelli (Fondation La main à la Pâte, France) and Sid Strauss (Amrita University, India; Tel Aviv University, Israel) as necessary accomplices in order to achieve the now-more-graspable concept of scientific culture.

Writer and cultural manager Jorge Volpi (Universidad Nacional Autónoma de México, Mexico) and playwright Alan Brody (Massachusetts Institute of Technology, United States) brought art into the discussion, exemplified by exhibitions, theatre plays and even an Aleph (the mysterious object which reflects the whole universe, according to writer Jorge Luis Borges) as bridges between scientists and the general public.

The format of the meeting in itself is quite special and deserves a line. Almost twenty specialists “living together” for a couple of a days facilitates something that is not that usual: time to stop, talk, really know each other and debate freely about ideas and concepts. In fact, discussions during the meeting were very lively and rich, and it was probable the most valuable time of the conference, as many mentioned. We understood that those discussions included opinions that in some cases made us all doubt our previous ideas. And at the end, isn't it all about that?

So, did we define “scientific culture” once and for good? Certainly not. But we did put together experts from different fields and, indeed, the sum of the parts was exquisite, fostering innovative ideas and collaborations. While we didn't have a definition we did all agree that scientific culture is a multifaceted concept, it involves a wide range of players, from scientists and educators through to cultural industries, such as museums, theatre and writers. Moreover, the concept represents a life long endeavour so there is a demand for long-term engagement with the public, with the obvious need to focus across the life span).

We do know that scientific culture emerges from a panoply of disciplines, and requires public policies in order to reach its targets — i.e., all of us. But that will certainly demand a new meeting. We all look forward to it.

Course on scientific culture. 1–4 October 2019.

Directors of the School: Kurt W. Fischer, Antonio M. Battro and Sebastián J. Lipina.

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