

Elusive science cultures

Reviewed Book

BERNARD SCHIELE, XUAN LIU AND MARTIN W. BAUER EDS. (2021)
Science Cultures in a Diverse World: Knowing, Sharing, Caring
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Reviewed by

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Abstract

The latest in a growing number of edited volumes that take science communication as a phenomenon to be explored through science cultures is a rich book full of theoretical and methodological rigour. There are 17 chapters included here from 33 authors across 16 different countries containing selected paper contributions from the 2018 Science & You conference in Beijing jointly organised by the Chinese National Academy of Innovation Strategy and the University of Lorraine, France. With an opening address by Massimiano Bucchi, chapters are arranged thematically, with emphasis on the roles of institutions, state and media in the social dynamics and public understandings of science and technology across global cultures.

Keywords

Popularization of science and technology; Public engagement with science and technology; Science communication in the developing world

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“Nothing will ever bring home to my comprehension what a nebula that no one sees could possibly be” [Merleau-Ponty, 1962/2005, p. 502]. As theories of culture are invoked in this book under review to examine what science culture might mean, this Merleau-Ponty comment speaks to both the unknowability of science and the complexities of its communication. Yet, there is something tantalising about science’s continuous claims about the existence of scientific facts *out there* and our human obsession with describing how we come to know these facts as part of our cultures.

There is a growing number of science communication researchers tracking science and its public entwining as a set of cultures. While Bauer et al.’s [2012] edited volume, *Culture of Science*, asked how publics get involved with science and

worked towards indicators. *Science Communication: Culture, Identity and Citizenship* by Davies and Horst [2016] dug deeply into underlying concepts of capitalism, performativity and epistemology to reveal the structural restraints on science festivals and other public engagement activities involving science and technology. Then, in 2020, *Communicating Science: A Global Perspective* by Gascoigne et al. [2020] attempted to connect the dots of science communication across varying cultural contexts while asking the important questions of where global science communication is and where it may be going. Now, with *Science Cultures in a Diverse World: Knowing, Sharing, Caring*, Schiele, Liu and Bauer [2021] bring these strands of global science communication and pluralised cultures of science together. The book aims to look at the diversity of views from combinations of scholars and publics and some present a challenge to current science communication orthodoxy.

The editors are to be commended for selecting high quality conference papers from scholars around the world who contributed to the 2018 *Science & You* Conference in Beijing and for compiling them so neatly into this volume. It is striking how much social theory is used to shape the analysis of on-the-ground practices described in the chapters. There are nuanced reflections on theoretical contexts influenced by scholars as diverse as Bernadette Bensaude-Vincent and Clifford Geertz. Chapters are arranged thematically, focusing on roles of institutions, state and media and analysed using frameworks of social dynamics. It is an impressive analysis, but an easy definition of science culture remains ever more elusive. There is also no small amount of historical detail to be found on the shift from deficit to dialogue to participation in science communication (chapters 1, 7 and 8, in particular), the European Commission's earliest funding for science-in-society (chapter 9) and machinic thinking about learners aligning with emerging technology (chapter 10). Many chapters use empirical studies with quantitative and qualitative analyses of current issues making this an important advance into new territories of science communication in an era of alternative truths and disinformation bots. There is impressive detail in empirical chapters that use quantitative analysis of areas such as media frames (chapter 10) epistemologies of science (chapter 7) and science on social media in Canada (chapter 5).

From the beginning of the book, Schiele et al. find varying definitions and modes of action of science communication globally. The first chapter is primarily a content analysis of the Gascoigne et al. [2020] book mentioned earlier to assess terms used across the world. There is a fascinating alphabet soup of acronyms that have evolved in the ecosystem of science communication. Early terms that have stuck include *vulgarisation* with its origins in French and *science popularisation* in the Anglophone world and which, as demonstrated by Ren et al. in chapter 15, remains within the Chinese framing of science communication.

There are two particular challenges presented by this book which seem to run counter to contemporary science communication. The first challenge is a return to science literacy. How can we measure science culture without collapsing into deficit model thinking when deciding on indicators? While Responsible Research and Innovation (RRI) indicators (covered by at least three chapters) connect science communication to inclusivity, participation, local governance and ethics from a society perspective, we must heed here the many authors who make a strong case to (re)consider public literacy to guard against misinformation.

Raza and Singh develop a cultural distance model in chapter 8 which suggests that a scientific concept or idea needs time to travel through the cultural fabric of a region or state, citing knowledge diffusion of coronavirus and Covid-19 as an example. However, this chapter is an important reminder how West-centric models of testing scientific “temper” in publics will always be heavily biased against countries like India with monocultural indicators of science literacy.

The emergence of science shops at the intersection of civil society organisations, business sectors and research institutions in France is the subject of Samuel Cordier’s chapter. This is a uniquely French cultural context, with an emergence of a strong scientific culture which Cordier deems essential to the wider cultural fabric of society. Not all countries share this element of how science is disseminated and debated.

Per Hetland from Norway rightly places current framing of participatory science within such domains such as RRI and citizen science in chapter 2. Anne Dijkstra picks up on RRI in chapter 6, discussing scientists’ reflexivity in society and European-Chinese cultural adaptation in NUCLEUS, a European project. However, does the adaptation move both ways? This is a second challenging issue raised by this book and reveals a blind spot for all of us in science communication. Given the recent call to action from science communicators across the Public Communication of Science and Technology (PCST) Network denouncing the attacks by Russia on Ukraine, it is noteworthy that Zhao and Liao in chapter 12 calls out how Chinese policy privileges risk of technology failure over societal risks, using AI as an example.

The problems presented by this book are of course in hindsight: global discourse since these chapters were written include war, power and knowledge in the shadow of a pandemic and a Russian invasion. But what can responsible cultures of science say of the oppression of civil society in China? We are living in a moment where the cultures we inhabit need more than ever a responsible science with public involvement. The inference from chapter 8 is that the strategic, one-way Shannon-Weaver communication approach promoted the arms race. This presents a historic lesson to challenge powerful global regimes today.

This book is an important contribution to the debate about the responsibilities of scientists themselves and scientific institutions to allow different publics and their combined cultures to shape science. The “knowing” from the title is extremely well covered. We, as science communication readers, benefit greatly from its “sharing”, and indeed the analysis of how science is shared across cultures. But what of the “caring”? We know that injustices, inequalities, power games and exclusion continue to exist in institutions of science as with all other cultures. Might this volume require a sequel that comes down to troubled Earth to view the nebulae of power relations that make up science cultures?

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