

## Comment

# Road maps for the 21<sup>st</sup>-century research in Science Communication

**Nico Pitrelli**

*ABSTRACT: This is an introduction to the essays from the Jcom commentary devoted to the statute and the future of research in science communication. The authors have a long experience in international research in this domain. In the past few years, they have all been committed to the production of collective works which are now the most important references for science communication research programmes in the next few years.*

*What topics should science communication research focus on and why? What is its general purpose? What is its real degree of autonomy from other similar fields of study? In other words, is science communication its 'own' field? These are some of the questions addressed by the in-depth discussion in this Jcom issue, with the awareness that science communication is a young, brittle research field, looking for a shared map, but also one of the most stimulating places of the contemporary academic panorama.*

The past two or three years have really been fertile ground for the academic research on science communication. Some of the most prominent international experts have published a series of collective volumes gathering the most promising trends and research projects in this domain.<sup>1</sup>

These works have different functions: they are the best introduction to understand the present degree of maturity and reflection in science communication; they draw a map of the most relevant topics and players in this field of study; they show the will to build a more solid discipline identity. On the other hand, their necessarily diverse nature reflects the lack of a consistent theoretical framework of science communication.

To claim some recognizability and autonomy, the research in this domain requires more than a specific subject of study. It should progressively group, order and connect the phenomena it wants to describe within models and wider theoretical constructions. The sum of the studies and analyses so far substantially developed within other similar and more consolidated disciplines, such as media studies, sociology, history of science and philosophy, social psychology, linguistics, social studies of science, should take a consistent form, able to *characterize* the specific features of the research in this realm, yet in consideration of the different traditions and curricula of studies.

How far have we reached in this attempt? What topics should science communication research focus on and why? What is its general purpose? What is its real degree of autonomy from other disciplines? Would it be more proper to treat it as a sub-discipline in a wider area or would it be important to pursue a strategy of “territorial demarcation”?

This Jcom issue collects the reflections and opinions from some of the editors of the abovementioned volumes, in the attempt to answer some of these questions. As we will have the chance to discover, the viewpoints on the statute and the future of the research in science communication do converge on some points, but not on others.

Massimiano Bucchi and Brian Trench agree with Susanna Horning Priest on the fact that this discipline will need a deeper theoretical analysis if it is ever to consolidate. According to Priest, communication studies are mainly the most suitable ground to build stronger theories. Bucchi and Trench are open also to other solutions, including the chance for science communication to emerge as an autonomous discipline with strong interdisciplinary characteristics.

The multidisciplinary and interdisciplinary character of the research in this domain is agreed upon by all the authors. However, Alice Bell thinks that it does not deserve a special place in the academic world. Her paper – which, as she admits, is a provocative story on how not to write an essay – is to show the

hybrid nature of science communication researchers and professionals, a condition which allows them to exist without claiming a special role. A different opinion is expressed by Toss Gascoigne et al., who conversely believe that this discipline would deserve special attention, given the increasingly crucial contribution by the scientific knowledge circulation processes on the most urgent topical issues. Finally, in his paper Richard Hollinam describes the shift from an analog scholar to a digital scholar in communication procedures and identifies Internet and the new media as the most significant challenge for science communication researchers in the next few years.

This Jcom commentary, although not claiming to thoroughly address the whole discussion on the statute of this discipline, offers a telling picture of the reflection and the instruments needed to ever more consciously guide the studies and analyses within a consistent framework.

Beyond the different approaches, the articles collected show that the present research perspectives are much wider compared with the time when the interest for science communication was born within the academic community.

This interest, which arose around the sixties, is generally traced back to the moment which saw the birth of the awareness of the role played by the media in science coverage, on the one hand, and of the extraordinary growth of science information, on the other hand, which created doubts and fears on the future of science itself.<sup>2,3</sup>

These worries arise in the scientific field especially. Therefore, it is not a surprise that the first studies on the relation between science and media refer to a communication model based on linear and discrete transfer of information and to a view of science considered as a form of knowledge hierarchically prevailing over the others. Starting from these assumptions, the research issues especially concern the concepts of transmission and accuracy, whose quality is measured against the expectations of scientists.

In the second half of the eighties, a generation of scholars predominantly with a sociological orientation entered the stage and enormously widened the perspective on the functions, much more complex and articulate than the “translational” model, which performs the public communication of science and the communication among scientists.<sup>4</sup>

In this perspective, the history of research in science communication appears to reproduce the conceptual and disciplinary steps also gone through by similar areas of studies, such as historiography of science.

From an approach exclusively focusing on the so-called intellectual factors, abstract ideas and scientists’ merely mental processes, the analysis of science history gradually moved to the consideration of the importance of placing ideas in their wider cultural context. It implied the consideration of the political, economic and social factors that influence the scientific enterprise both in its institutional development and in the activity performed by a researcher in the laboratory.<sup>5</sup>

The history of science, opening to the contributions from sociology, gender studies, anthropology, research on material culture, has gradually overcome the limitations of positivist and idealist historiographies. All in all, the result is a more complete and less celebratory version of how science has developed.

Though it is still a work in progress, something similar has taken place in science communication.

The approach inherited by the first research projects on science coverage on the media reflects the assumption that science communication must somehow be the communication of the truth contained in scientific discoveries. The price paid to transform them into pieces of news ending up in the newspapers, with their consequent “corruption”, is supported and justified by pedagogical-educational purposes. Therefore, the research on media cannot do anything else but measuring the deviation from a cognitive ideal in order to understand how to cut errors and inaccuracies to a minimum.

With the stimulus of the sociological-ethnographic turn of the nineties,<sup>6</sup> a new perspective took over. Similarly to the most recent orientations in historiography of science, its goal was all in all to retrace the communication processes in their entirety and complexity.

There is another similarity we want to highlight.

Whereas the demystification of research in science communication as an activity exclusively aimed at identifying “distortion factors” has many merits, one should in any case consider the limitations deriving from the risk of getting divided among specialisms from other disciplines and of losing track of wider issues and perspectives that justify the interest in science communication.

Also in the history of science, on the one hand it is generally accepted that insisting on contextual factors had the merit of disputing the certainties of progress, individualism and authenticity centralized by Enlightenment-oriented historiography. On the other hand, one should not disregard the uncertainties

that hyperspecialization and hyperlocalism create in the ability to keep the awareness updated and in general the uncertainties you can find in the whole field of study and therefore in the meaning that the phrase “history of science” may continue to have.

In both cases, doubts refer to the fact that research may be carried out disregarding or giving up what characterizes science, be it theoretical issues, languages, experimental techniques or institutional set-ups.

In this respect, it is worthwhile to report the viewpoint of one of the founding fathers of the social history of science, Roy Porter. Despite not ignoring the demystifying merits of the perspective he himself had contributed to consolidate, he used the following words on the perils of an excessively undifferentiated approach in the historic reconstruction of knowledge on the natural world:

*“All the same, it remains true that science has become a relatively multi-national enterprise, and the scientific community has acquired immense strength, cohesion and bargaining-power because it possesses an organic life of its own beyond individual laboratory or national boundaries. Science has been remarkably successful in generating new knowledge, solving problems, expanding its frontiers and in policing its own advances. [...] In other words, science has its own internal, often highly technical dynamical which require careful attention.”<sup>7</sup>*

As the essays collected in this Jcom issue partly demonstrate, we believe that also for the research in science communication the chance to produce original, useful and recognizable knowledge is based on the ability to find a subtle balance similar to the one described by Porter.

*Translated by Massimo Caregnato*

## Notes and references

- <sup>1</sup> For example A. Bell, S. Davies and F. Mellor (2008) (eds.), *Science and its publics*, Cambridge Scholars Publishing, Cambridge; M. Bucchi and B. Trench (2008) (eds.), *Handbook of Public Communication of Science and Technology*, Routledge, London; M. Bauer and M. Bucchi (2007) (eds.), *Journalism, Science and Society: Science Communication Between News and Public Relations*, Routledge, London; D.Cheng, M. Claessen, T. Gasgoigne, J. Metcalfe, B. Schiele and S. Shi (2008) (eds.), *Communicating Science in Social Contexts*, Springer Science Business Media, New York; R. Holliman, E. Whitelegg, E. Scanlon, S. Smidt and J. Thomas (2009) (eds.), *Investigating Science Communication in the Information Age. Implications for public engagement and popular media*, Oxford University Press, Oxford; R. Holliman, E. Whitelegg, E. Scanlon, S. Smidt and J. Thomas (2009) (eds.), *Practising Science Communication in the Information Age. Theorising professional practices*, Oxford University Press, Oxford; L. Kahlor and P. Stout (2009) (eds.), *Communicating Science: New Agendas in Communication*, Routledge, New York; S. H. Priest (2010) (eds.), *Encyclopedia of Science and Technology Communication*, Sage, USA.
- <sup>2</sup> B.V. Lewenstein (2001), *Science and the Media*, in *International Encyclopedia of Social and Behavioral Sciences*, Elsevier, London, 13654-57.
- <sup>3</sup> C. Dornan (1990), *Some Problems in Conceptualizing the Issue of “Science and the Media”*, in *Critical Studies in Mass Communication 7*: 48-71.
- <sup>4</sup> Among the now “classic” studies which launched a new approach to research in science communication, it is worthwhile to mention the following:  
T. Shinn and R. Whitley (1985), *Expository Science: forms and functions of popularisation*, Reidel Publishing Co, Dordrecht (NL);  
D. Nelkin (1995), *Selling Science: How the Press Covers Science and Technology*, W.H. Freeman, New York;  
B. Wynne (1995), *Public Understanding of Science*, in S. Jasanoff, G.E. Markel, J.C. Petersen and T. Pinch (eds.), *Handbook of Science and Technology Studies*, Sage, London, pp. 361-88.
- <sup>5</sup> J.R.R. Christie (1990), *The Development of the Historiography of Science*, in R.C. Olby, G.N. Cantor, J.R.R. Christie, M.J.S. Hodge (eds.), *Companion to the History of Modern Science*, Routledge, London, pp. 5-22.
- <sup>6</sup> A. Irwin and M. Michael (2003), *Science, Social Theory and Public Knowledge*, Open University Press Maidenhead, Philadelphia, pp. 28-32.
- <sup>7</sup> R. Porter (1990), *The History of Science and the History of Society*, in R. C. Olby et al., cit., p. 44.

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