

Parallel Session 23: What are we talking about when saying ‘public dialogue’?

TOWARD A “PALAEONTOLOGY” OF PUBLIC REPRESENTATION OF SCIENCE

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Abstract

Classical studies in Public Perception of Science mainly focus on the declarative aspects of interests and attitudes about S&T. We propose here an approach to investigate less explicit, underground aspects of public representation of science, which can play relevant role in public dialogue. We analyse, within a historical framework, qualitative data coming from semiotic analysis of focus groups with children and science images in the media. We show that at least three pre-scientific “sediments” are present, charged with mythical connotations about knowledge, and three modern ones about S&T, which interact today contributing to the construction of public representation of science.

Key words: Public Perception of Science, history of ideas, public dialogue

Context and Objectives

International surveys on Public Perception of Science, as well as comments by several scholars, showed that the social representation of science tends to be di-polar (Miller et al., 1998; OST, 2000). Science is painted at the same time as magic, esoteric and as a source of a logic, objective, democratic knowledge about the world. It touches our lives intimately, but at the same time is “not for us”. Scientists, in the fiction and in the news, are depicted as clear-headed and absent-minded, mad and rational, passionate and with no sentiments.

Such di-polarity, bizarre or embarrassing to someone, was interpreted in the classical context of the “deficit model” (Wynne, 1995; Bucchi, 2004) as a mere consequence of an insufficient level of scientific literacy (what we don’t understand, scares us).

Nevertheless, it can be viewed also as a symptom of the fact that science is so deeply rooted in culture and social life that it assumes some mythical connotations. An accurate study of these levels can be important to understand what public dialogue can be today.

Methods and Results

We used data from two our precedent works, integrating them in a historical framework to put in evidence the “sedimentation” of elements in social representation of science. One data set was based on focus groups and semiotic analysis of drawings by children of age 8 in 6 Italian locations (Castelfranchi & Manzoli, 2004). Other data came from a preliminary study about scientific metaphors and images in the Brazilian propaganda.

Our analysis stressed out the presence of at least six symbolic “sediments”, whose origins can be traced back in history. Three of them are clearly linked to pre-scientific images about knowledge and rich in di-polar patterns which are characteristic of stories with mythical connotations (Propp, 1996; Lévi-Strauss, 1960).

Since early times, knowledge was associated to at least three correlated but different “dilemmas”, characterised by a positive pole (marked by fascination, enthusiasm, excitement) and a negative one. All of them are strongly present both in fictional and non-fictional representation of science, as well as in children perception of S&T:

- a “forbidden fruit dilemma”: the search for knowledge can represent a violation of social, natural or religious kind and, as such, be punished. Myths or legends in almost all cultures re-invent this level in several forms (the biblical one, Prometheus, Ulysses are just some examples);
- a “Sorcerer’s Apprentice dilemma”: knowledge is power and power must be controlled. The risk of losing control is always present;
- a “Golem dilemma”: knowledge is transformation of nature. The barrier between different living beings or even between the living and not-animated can be violated;

Pygmalion, the homunculus in Goethe’s *Faustus*, *Dr. Frankenstein* are just examples of how these 3 elements can mix and interact to form new stories, in ways similar to those described by Levi-Strauss for myths (Castelfranchi, 2000; Turney, 1998).

These connotations about knowledge are not just typical of general public perception. Scientists use them too. J.B.S. Haldane describing (in *Daedalus*, 1923) the scientists as a Prometheus, or Nobel prize Walter Gilbert comparing Human Genome Project to the “sacred Grail” are just two examples.

Other sediments in this stratigraphy of public representation of science are typical of modernity. We individuated at least 3 different levels:

- “wunder-kammer”, or Renaissance level: science as new worlds, new knowledge, new technologies, wonder and novelty;
- industrial revolution (or “Baconian”) level: science as a rational method both to explain the world and to dominate nature for practical goals;

- “Enlightenment” level: science as the “light of reason”, as truth, freedom and democracy.

Conclusions

A significant part of the mediatic discourse, both fictional and non-fictional, tells us a double-faced story about science and scientists: a “positive pole”, euphoric, official, visible, lives side by side with a negative one, scared, pessimistic, in which science can be a violation of natural or divine order, and scientists can be “mad” or dangerous.

These apparent contradictions of science’s image in society are, however, proofs of the vitality and deepness of the roots of science in society. Science is culture: it propagates not only in the form of concepts and claims about the world, but also by means of metaphors, dreams, “underground” representations in which ambivalence is a clue for mythical connotations (Sperber, 1996). The study of these connotations, which appear to be stratified and formed by ancient images, can play relevant role in the analysis of public engagement obstacles and in planning dialogue strategies.

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