

1. Open parallel session: Framework evolution around Pcst

2. BELIEFS THAT DIFFERENTIATE, IDEAS THAT JOIN: PARALLELING DISCOVERY AND COMMUNICATION TO MODEL PCST

3. Andrea Cerroni

Department of Sociology and Social Research - University of Milan-Bicocca, via Bicocca degli Arcimboldi 8, 20126 Milano, ITALY. Tel. [Fax] : (+39) 02 6448.7566 [7561]; e-mail: andrea.cerroni@unimib.it

4. Abstract

Traditional PCST models are insufficient to understand and intervene onto science public perception. It is advanced a socio-cognitive theoretical framework, articulating knowledge in *beliefs* and *ideas*. While we *produce* ideas thematizing beliefs through open critics and public communication, we *live within* hidden, involuntary local beliefs. Beliefs are responsible for differentiating local points of view; scientific ideas are designed to be shared in widening horizon. It is suggested a communicative basis for science, neither universal nor particular, but relativistically embodied, that enables a participation model.

5. Kew-words: beliefs, ideas, relativistic knowledge

5. Text

Usual models for PCST - *deficit*, *contextual* and *lay expertise* (Lewenstein 2003) - are openly judged unfit to understand public perception. However, widely demanded participative models are still pretty unexplored. Suggestions come distinguishing knowledges and paralleling discovery and communication.

Distinguishing knowledge: beliefs and ideas

A useful distinction inside knowledge goes back to Ortega y Gasset (1934).

Beliefs are hidden, involuntary local knowledge, similar to *habitus* (Bourdieu 2001). This is locally socialized knowledge where we *live within*. This is *personal knowledge* (Polanyi 1958) we receive while having experience in our socialized, daily life. So, great part of such knowledge is not, properly speaking, *personal*: indeed, it is here before we are born and we leave it pretty unchanged, as it is just *taken for granted*. It is also the ground of our reasoning, the scientific one, too; and that's the reason why we feel it is our "personal" knowledge.

Ideas are arguments openly stated that, following Hacking (1999), we discuss, accept, share, state, work out, clarify, contest through a *voluntary* reasoning starting from a thematization of some beliefs. So, idea-type knowledge is dialogical, and lives of public communication.

So, we *accept* ideas but we do not accept beliefs, as we *receive* them (Cohen 1992). Highly different are the communication ways of the two kinds of knowledge: ideas travel publicly through irradiation across minds; beliefs travel through implicit, imitative cultural contagion (Sperber 1996).

Ideas are driven towards coherent and complete *corpuses* (theories), but such a goal is strictly unreachable (after Goedel).

Beliefs are responsible for fundamental attitudes, as we can see with biotechnology public perception (e.g. Cerroni 2003), and they are arranged in unstructured *clusters*, with some beliefs more stable than the others. To be more specific, such clusters are not structured by subject's reasoning, but are structured by the actual experience, socially structured by subjects' objective life, indeed.

Paralleling discovery and understanding: a realistic science of science

While studying scientific discoveries, we have to go over the positivistic dichotomy of contexts: discovery is not a cognitive process entirely different from public understanding.

Scientific revolutions are characterized by conceptual breakdown driven by heuristic reasoning based on beliefs, as it for common reasoning while producing conceptual innovations (e.g. Cerroni 2002). Therefore, a parallel can be elaborated for public communication, in order to model heuristic reasoning of public perception. As a result, we can take advantage of *science of science* both to analyse and to intervene into public perception.

Beliefs guide the framing process of new concepts, and the cognitive processes of discovery should be openly presented to public in order to both stimulate analogous reasoning and to reduce the distance

between science and daily life. As discovery is not matter of “genius”, but of socio-cognitive job, so is for public perception. Apart from technical difficulties, the biggest ones, as science history shows are of the same nature. Scientist and his public make the same cognitive effort in the common background knowledge.

Relativity beyond relativism: science to join, communication to participate

If scientific knowledge is not fully different from the lay one, but an idea-type knowledge built on common beliefs and aimed at *reflexivity* (Bourdieu 2001), we de-mythize and we enhance the social image of science to the public. Science, indeed, has the social mission to unveil common beliefs, transforming them in ideas and putting their content under public judgment, to improve knowledge in front of evolving experience and more general contexts.

If beliefs are responsible for differentiating local points of view (Elias' *involvement*), ideas - especially scientific ones - are designed to be shared in widening horizon (*detachment*), subjected to onus probandi through open confrontation. However, also if scientific knowledge is based on beliefs, the image of science has not to be reduced to socialconstructivism or socialrelativism of the current *Sociology of Scientific Knowledge*. It is suggested that communication is science basis as it this a paramount *common-action*, neither universal nor particular, but *general relativistically* embodied in objective structure of historical-specific human experience (cfr. Bourdieu 2001). And this is less emotively involved and more rationally detached knowledge to be participated by variety of subjects. Communicating this - *scientific* - view of science, we could enhance actual participation in such a participative type of knowledge as scientific knowledge actually is, avoiding both fatal risks of knowledge-based society: technophobia and technocracy.

6. References

- Bourdieu, P. (2001). *Science de la science et réflexivité*. Paris: Raison d'agir.
- Cerroni, A. (2002). Discovering relativity beliefs: towards a socio-cognitive model for Einstein's Relativity Theory formation. *Mind & Society* 3 (5), pp.93-109.
- Cerroni, A. (2003). *Homo transgenicus*. Sociologia e comunicazione delle biotecnologie. Milano: FrancoAngeli.
- Cohen, J. (1992). *Belief & acceptance*. Oxford: Oxford University Press.
- Elias, N. (1983). *Engagement und Distanzierung*. *Arbeiten zur Wissenssoziologie*, Suhrkamp, Frankfurt am Mein.
- Hacking, I. (1999). *The social construction of what?*. Cambridge (Mass.): Harvard University Press.
- Lewenstein, B.V. (2003). Models of public communication of science and technology. From <http://communityrisks.cornell.edu/BackgroundMaterials/Lewenstein2003.pdf>.
- Ortega y Gasset, J. (1934). *Ideas y creencias*. In: *Obras Completas* 5. Madrid: Revista de Occidente.
- Polanyi, M. (1958). *Personal knowledge. Towards a post-critical philosophy*. London: Routledge & Kegan Paul.
- Sperber, D. (1996). *Explaining culture. A naturalistic approach*. London: Blackwell.