

BRUNO, Latour. 1999. **Pandora's Hope: Essays on the Reality of Science Studies.** Harvard University Press: Cambridge, Massachusetts and London, 324 pages.

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Bruno Latour has been one of the key figures in the field of cultural studies of science for almost twenty years, both in France and in the United States. In collaboration with Steve Woolgar, Latour conducted in the late 1970s one of the first ethnographic laboratory studies, the end product of which was published as *Laboratory Life: The Social Construction of Scientific Facts*. Works such as these revolutionized budding science studies research as they incorporated a new way of investigating science in the spirit of Thomas Kuhn and Paul Feyerabend, whose pioneering works have been recently translated into Slovene. *Pandora's Hope* is but the most recent of a series of Latour's influential works, including *The Pasteurization of France*; *We Have Never Been Modern*; *Aramis*, or *The Love of Technology*; and *Science in Action: How to Follow Scientists and Engineers Through Society*.

Pandora's Hope: Essays on the Reality of Science Studies is an edited collection of essays with which Latour attempts to answer a question asked of him at a conference: »Do you believe in reality?« While at first glance this question may seem absurd, it is in effect an accurate indicator of the level of communication and/or misunderstanding between scientists and science studies researchers. A great deal of science studies research, including research in the anthropology of science, has come under attack in recent years. Criticism of such research includes books such as *Higher Superstition: The Academic Left*

and its *Quarrels with Science* written by Paul R. Gross and Norman Levitt as well as NYU physics professor Alan Sokal's prank on the editors of the journal *Social Text* by successfully submitting for publication a nonsensical essay applying postmodern theory to quantum physics (*Social Text* 46(1996)). While Latour does not engage in another round of what has been referred to as the »science wars«, his collection of essays comprise the most comprehensive depiction of his position as a science studies researcher thus far. As he himself writes, his scientist colleague's question »Do you believe in reality?« signalled to him the extent to which his research and that of other social science researchers has been misinterpreted. »What I would call 'adding realism to science' was actually seen...as a threat to the calling of science, as a way of decreasing its stake in truth and its claims to certainty...The distance between what I thought we had achieved in science studies and what was implied by this question was so vast that I needed to retrace my steps a bit. And so this book was born« (p. 3).

Latour's aim in this work is to unravel the differences in references made to reality by scientists and science studies researchers as well as to analyze why scientists would ask this sort of question (»Do you believe in reality?«) of science studies researchers. Latour explains that the position of science studies researchers does not advocate the position opposite to that of scientists: »that there is no reality out there; that everything goes; that science has no conceptual content; that the more ignorant one is the better; that everything is political anyway; that subjectivity should be mingled with objectivity; that the mightiest, manliest, and hairiest scientist always wins provided he has enough 'allies' in high places« (p. 300), and so on. Instead Latour argues that science studies' focus

on scientific practice enables researchers to view the work of scientists from a point of view independent of the way that scientists view themselves and their work, a point of view that scientists cannot assimilate into their way of thinking. Hence the question: »Do you believe in reality?«

While at first this question seems straightforward, Latour explains that it in turn presumes a set of questions, none of which can be defined separately: »the epistemological question of how we can know the outside world, the psychological question of how a mind can maintain a connection with the outside world, the political question of how we can keep order in society, and the moral question of how we can live a good life« (p. 310). In order to argue the case for reality in science studies, Latour addresses all the different aspects of this question. Such a task requires of him a thoroughness and lucidity of argument that ultimately makes this work accessible and interesting for all sorts of readers. Furthermore, Latour is very balanced in his presentation of science and science studies researchers; while occasionally irreverent in style (he depicts Descartes' bodiless observer as a mind-in-a-vat), he avoids being reductive in his criticism.

In the first chapter Latour outlines the intellectual history of the question posed to him, tracing its philosophical roots to Descartes and Kant. The question as it posed by scientists presumes a relation of absolute knowledge between a disembodied mind and an outside world: subject and object. In this sort of relationship the social, i.e. society, as well as the outside world is presumed to be objective and passive, to be acted upon by the bodiless observer. Latour dedicates the remaining chapters to explaining how and why science studies' focus on scientific practice has up-ended the presumed relationship among these factors. In chapter two Latour

argues that in observing the scientists in action one soon is faced with the inaccuracy of the presumed relation between a disembodied mind and a pristine, outside world. Such a relation presumes a range of instruments and disciplines to which scientists have constant access and that always already mediate the supposed confrontation between mind and object that is continually written out of scientific discourse. In chapter three Latour turns to the distinction made between the context and content of science, and employs the story of physicist Frederic Joliot's efforts at producing the first artificial nuclear chain reaction to demonstrate how one cannot analyze science separate from the rest of society. Instead, in constructing a circulatory system model of scientific facts, Latour tries to point to a different sort of relationship between science and society.

In chapters four, five and six he focuses on the outside world of objects in relation to the issues of fabrication and construction (are objects real or are they fabricated?) often identified with science studies, particularly insofar as there are associated with social constructivism. Through a discussion of Pasteur's laboratory experiments with lactic acid ferment, Latour compares the relationship presumed between scientist and object upon which the question of construction is based, and the one that can be gleaned from observing laboratory experiments. Rethinking the distribution of agency and temporality between subject and object, and becoming aware of changes both in subjects AND objects in a laboratory setting may enable us to modify our understanding of construction, particularly its supposed opposition to autonomy identified with reality. Instead of identifying autonomy with reality, Latour argues that it is the relations between what are termed subjects and objects (which he refers to as humans and nonhumans exist-

ing together in a collective) that render both subjects and objects real.

After having addressed the relationship between science and society in chapter three, Latour turns his attention in chapters seven and eight to the roots of the distinction between science and society presumed by scientists. According to Latour, the opposition to science studies' statements concerning the constructedness of reality (which scientists equate with artificiality) lies in scientists' fear that reality be reduced to depending on whatever society wants it to be: the ancient division between might vs. right. In a search for another way to imagine the interaction between science and society, Latour traces this opposition back to the Gorgias, Socrates' famous debates with the Sophists and to particular definitions of rhetoric, politics, and the polity (society) reduced to brute force.

In the final chapter Latour once again brings to bear science studies' focus on scientific practice to re-evaluate the distinction between reality and fabrication, fact and fetish. Observation of science in action reveals what is erased from science in theory, namely that both facts and fetishes are constructed, and that scientists' agency depends on their eliding their roles in the construction of scientific facts while in turn disclosing the constructedness of fetishes. However, Latour argues, science studies should not content itself with revealing the constructedness of scientific facts (which is what scientists do with fetishes) but instead focus on why some are considered facts and some fetishes.

Given the state of affairs in the »science wars«, it is doubtful that Pandora's Hope will win over any converts. However, it is a very welcome addition to the discussions between scientists and science studies researchers, as Latour brings two decades of experience in the field of science studies to bear on his efforts to

clarify his position, particularly against the generalizations made about the field. In this fashion Pandora's Hope will be interesting reading for scientists, for science studies specialists, and for those who are searching for a useful introduction to the field of science studies and the anthropology of science.

Works cited:

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