# Between Archimedes and Munschausen

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Professor Mário Bunge is right in his indignation against the irrationalist, anti-scientific and anti-intellectual inferences so often associated with the "strong program" of the sociology of science. Quantum physics and astrology are not the same thing, and when the "strong program" is used to argue the opposite, it deserves the criticism. I am afraid, however, that, in his well-justified indignation, he throws out the baby with the bath's water.

Freed from its obscurantist and counterculture connotations, what the new sociology of science shows is that knowledge is constructed in the interaction among people and between people and nature, and cannot be understood outside this interaction. In its best version, it does not intend to replace "science" with "social", but to show the social (and in that sense "conventional," which is different from "arbitrary") nature of the cognitive processes. For this, the new sociology of science crosses the sanitary cord that authors such as Robert Merton and Joseph Ben-David had tried to place between the realm of Science with a big "S," which they did not adventure to penetrate, and the study of its sociological contours. It is curious that Professor Bunge starts his criticism by accusing the sociologists of science of being "externalists," of ignoring the subject matter of their interpretations, a charge which is clearly not applicable to the founders of the modern sociology of science, from Ludwig Wittgenstein (1967) to Michael Polanyi (1962), Ludwig Fleck (1973), Thomas Kuhn (1970), J. D. Bernal (1939) and many others who, like David Bloor, came to the sociology of science from the fields of logic and mathematics. The problem is not ignorance, but the sacrilege that this attempt to invade the temple of science seems to represent, a problem well discussed by Bloor in his writings.

The new sociology of science is a "research program" which should be compared with the previous one, that of the epistemology, with a long history of trying to establish the demarcation lines between what is science and what is not. Professor Bunge's stand on this question is well known, and I would not try to refute it here. But it is important to say that there are strong arguments against the very

possibility of this demarcation, and the contribution of the "second Wittgenstein" to this question cannot be simply dismissed by saying that he was concerned only with common, not scientific language. Wittsgenstein's point was precisely that it is impossible to establish this frontier, which led him to abandon the research program of rational epistemology and establish many of the central ideas of the modern sociology of science.

To say that to question the demarcation line between Science (with capital S) and other forms of knowledge is to throw away the research procedures and scientific findings of the last century is the same as to say that to question the dogmas of the Church is to abandon all ethical and moral achievements and concerns. The parallel is interesting because the attack on religious dogmas has often led to irresponsible, nihilist and immoral stands, while the sociology of science had often been used to interpretations like "anything goes," and the assumption that knowledge and politics, relativity theory and witchcraft are all the same things. However, the dogmas of the Church have also provided the ground for hypocrisy and pharisaism, and the same can be said of the dogmas and canonization of Science.

With all its excesses and difficulties, the new sociology of science has been important in bringing science down from its altar, and in showing how science is a contingent, limited, relative and humane activity - but not less important and significant because of that. The enormous multiplicity and variety of disciplines presenting themselves as "scientific" - from theoretical physics to meteorology, from neoclassic economics to jurisprudence, from molecular biology to plant taxonomy - makes it unlikely that a common demarcation line could be established for all of them, and shows that the frontiers between science and pseudo science (what is the place of geography, library sciences, business administration, epistemology, linguistics and the psychology of extrasensory perception?) is a matter of social conventions, which results from a permanent dispute among social groups in their attempts to bring respectability and predictability to their fields of work.

The enlightenment ideal, so dear to Professor Bunge, to me and to many others, which includes the belief in the development of men's capacity to learn about nature and to use this knowledge in a way that is socially and morally fair, can and should still be pursued, but from a more modest stand than in the past, with the perception that we cannot know *a priori* where lies the Truth, the Revelation or the future of history. For good or bad, Archimedes' fulcrum does not exist. The sociology of science is not, in principle, worse or better than any other type of knowledge. It has to find its ground in the same quicksand that supports our moral principles, our place

in history, our rules of social bonding and our knowledge about the nature that surround us. It is from this sand, pulling ourselves from our hair like the Baron of Münschausen, that we must construct the space of our convictions, and protect it against the barbarians of past and present.

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