

# *Science, emancipation and the variety of forms of knowledge*

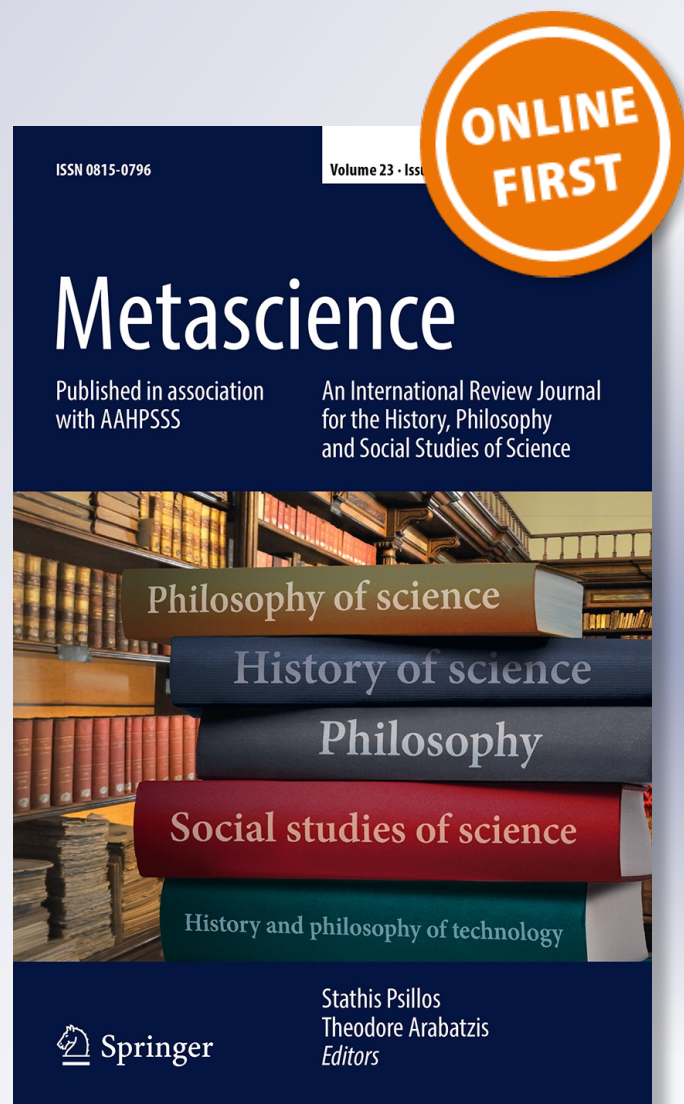
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## Science, emancipation and the variety of forms of knowledge

**Boaventura de Sousa Santos: Epistemologies of the South: Justice against epistemicide. Boulder: Paradigm Publishers, 2014, xi+240pp, \$33.95 PB**

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*Epistemologies of the South* explores “a set of inquiries into the construction and validation of knowledge born in struggle, of ways of knowing developed by social groups as part of their resistance against the systematic injustices and oppressions caused by capitalism, colonialism and patriarchy” (x). The author, Boaventura de Sousa Santos—Professor of Sociology at the University of Coimbra (Portugal) and Distinguished Legal Scholar at the University of Wisconsin–Madison—is one of the leading intellectuals of the World Social Forum (WSF), the network of organizations from the “global South” that challenge the current dominant order, and whose activities are often informed by experiences, aspirations and understanding that lie outside of the comprehension of the world as provided by mainstream scientific, economic and social theories. Through the WSF, Santos has made profound contact with the knowledge, forms of knowledge (FoKs), their strengths and limitations, and the practices informed by them, of people from many nations and cultures from the “global South”, including indigenous peoples. (For a variety of concrete examples, see Santos 2007a). The author draws provocative implications from this about science and how it should be interpreted. In this review, I will focus on three of them.

First, modern science lacks the “capacity to capture the inexhaustible diversity of the world” (108), so that scientific knowledge has inherent limits. They concern, on the one hand, the states of affairs, experiences and possibilities that science can grasp, and on the other hand, the range of practices that scientific knowledge can inform. Moreover, other FoKs, themselves inherently limited, enable knowledge to be gained of states of affairs, experiences and possibilities that lie beyond the grasp of science and to inform practices (notably those of emancipatory movements of the

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“global South”) that aim to realize possibilities that cannot be identified within scientific theories.

Second, social forces, whose central practices (technological, economic) are informed by scientific knowledge, have contributed to entrench the primacy of science, and the interpretation of it as universal and without limits or boundaries (137, 171, 179, 220), capable in principle of producing knowledge of all that there is, or at least of all that can be known or that can play a useful role in informing the trajectory of the future (80). They do not allow that there may be transforming possibilities (including hitherto unrealized ones) that cannot be identified within scientific FoKs. Hence, they endorse “the monopoly of science and the technologies sanctioned by science” (15, 119), marginalize, disregard, silence, condescend to, and often violently eliminate other FoKs from the spaces they control, thereby ensuring that ignorance is maintained of matters that might be grasped in these FoKs. Santos calls this “epistemicide” and identifies it as a “cognitive injustice”, an unjustified lack of “equity between different ways of knowing and different forms of knowledge” (237), and it undermines the practices (including emancipatory ones) that they might inform, a social injustice. Hence, his frequently repeated theme: “there is no global social justice without global cognitive justice” (vii, 124, 237). (For more on “cognitive justice”, see Santos 2007b; cf. Fricker 2009, on “epistemic injustice”).

Third, this cognitive injustice cannot be remedied unless scientific knowledge is recognized as being one FoK among many (42, 212), and equitable conditions are made available for the development of a diversity of FoKs (237) and for dialogue among them (161)—so as to expand the “horizon of possibilities” (20) that are actively being explored.

These three claims encapsulate a profound critique of a widely held interpretation of modern science and of the social role that it has been accorded, and they point to a more satisfactory interpretation, one that fits better with the quest for social justice. Now, a few clarifying remarks.

There is no space available to discuss adequately Santos’ carefully articulated notion of “form of knowledge” (138 ff). It is well worth a careful scrutiny! (He often calls FoKs “epistemologies” and “knowledges”). Briefly, a FoK provides descriptive and methodological resources that are apt for investigating the causes and possibilities of a domain of phenomena. All FoKs are partial and situated. No one FoK can serve to grasp all aspects of all states of affairs and to inform all practices. Different FoKs may be needed to grasp different states of affairs or aspects of them. One, e.g., exemplified by theories of molecular biology, provides categories and resources that are apt to chart the genomes of plants and develop techniques for their modification, but it lacks those, which may be provided by other FoKs, needed to identify and investigate the possibilities of plants as components of sustainable ecological systems, and as sociocultural objects that may have a role in emancipatory practices, such as those of the “food sovereignty” movement (Lacey 2015). A FoK, which may incorporate a conception of nature and human well-being, is closely linked with the social practices that it can inform, and each one bears its own “criteria of rigor and validity that operate credibly in social practices” (176). Knowledge claims made within a particular FoK are subject to the test of the

relevant kind of experience gained in social practices, not necessarily in experimental practices; hence, having cognitive credentials with sound empirical foundation—“analytical objectivity”—is not limited to scientific FoKs. Analytical objectivity, however, does not imply “ethical–political neutrality” (201).

What Santos intends by “scientific FoKs” is not systematically presented. While he points out that modern science is not always methodologically monolithic (195), he emphasizes that, for the most part, it involves the production of “exact knowledge, based on mathematized hypotheses about nature and systematic experimental verification” (102), which informs technological developments and incorporates the conception of nature and society as separate (23). More generally, scientific FoKs are those deployed in institutionalized and professionalized science (105) situated socially where “cognitive-instrumental rationality” (71) predominates in social practices. I am not convinced that this suffices for a robust distinction between scientific and non-scientific FoKs. Indeed, I prefer to expand what counts as “scientific” knowledge to incorporate all empirically vindicated claims, while recognizing that there is a pluralism of “scientific” methodologies, no one of which suffices for gaining comprehensive understanding of the world (Lacey 2014). Be that as it may, Santos’ claim remains intact that the FoKs, whose primacy and all-encompassing potential tend to be presumed in professionalized science, cannot grasp the possibilities of sustainable ecological systems and social justice that the current world situation affords, and thus, they are incapable of informing the practices of emancipation.

Santos does not disregard modern science and the fact that it provides confirmed knowledge of important domains and aspects of phenomena and that it soundly informs technological practices. Rather, he challenges the interpretation of science as universal, exclusive, and able to comprehend all that can be comprehended, to identify all realizable possibilities and to inform all viable practices. This interpretation secretes an ethical–political claim (188). His point is that science has the kinds of limits mentioned above; and every other FoK also has limits. He is neither a sceptic nor a relativist about the knowledge that science produces within its proper limits (190). He does not propose the global replacement of modern science by another FoK; science is to be complemented by FoKs that enable additional possibilities to be grasped. Generally, there is no conflict between scientific and other FoKs, except when one or other of them makes claims beyond its proper limits (186), as when scientists claim that there are no viable possibilities for addressing the food and nutrition needs of everyone without prioritizing forms of farming that are based on technoscientific innovations (Lacey 2014, 2015).

It follows, Santos argues, that science should be interpreted as one component of the “ecology of forms of knowledge” (189, 193, 199), one that is situated so as to inform technological practices and to be in dialogue with other FoKs (42). This is to enable us “to reassess concrete interventions in society and in nature that the different [FoKs] can offer... [where] concrete hierarchies emerge from the relative value of real-world interventions” (205), keeping in mind that “from the perspective of the epistemologies of the South, inquiries into ways of knowing cannot be separated from ways of intervening in the world with the purpose of attenuating or eliminating... oppression, domination, and discrimination...” (238).

The author's solidarity with the emancipatory movements and his acceptance of the urgency of their struggle for justice are apparent throughout the book. At the same time, the book is carefully researched, thoroughly argued, critically alert, erudite, original and challenging. It contains detailed inter-connected arguments (often using novel terminology that I have largely avoided using) that defy brief summary, defending a variety of provocative claims that deal with political, economic, social, social scientific and historical, as well as scientific matters. All of this is controversial and does not fit easily with current academic habits of thought. Nevertheless, whether or not the conclusions of Epistemologies of the South are endorsed, I hope that it contributes to making central in the agenda of the philosophy of science questions about the role that science might play in fostering—or undermining—cognitive and social justice, and under what interpretation it should do so.

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