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Title: The New Demarcation Problem

Abstract: As it becomes accepted that values are an inherent part of scientific inquiry, it has become untenable to define unbiased science as inquiry that is unaffected by the values of the inquirers. At the same time, there clearly seem to be cases of biased science that cross a line between the inevitable management of epistemic risk in the light of value judgments and an epistemically inadmissible distortion of the research process. The question of just where and how this line is to be drawn is what I propose to call the New Demarcation Problem.

In this paper I first present a typology of proposals which purport to demarcate legitimate from illegitimate values. Next, I identify a standard by which proposals can be judged. Specifically, I borrow from the parable of Chesterton's fence, the upshot of which is that something should not be discarded until one has a firm understanding of why it should be kept. In this case, I identify three purposes that supported the value-free ideal: (1) Veracity- Scientists should pursue truth; (2) Universality- scientists should produce results usable by anyone for purposes not anticipated by the researcher; (3) Authority: Scientists should produce a trustworthy body of knowledge that has broadly recognized social legitimacy.

I illustrate the importance of these desiderata with reference to the 50-year history of Primodos, a hormonal pregnancy test. Prior to the "stick test", women could take a massive dose of estrogen to determine whether they were pregnant (if they were not pregnant the hormones would induce menstruation). At the time, there was concern raised regarding whether the test might increase the risk of birth defects. Recently, the British government has declassified these records. An exhaustive review of these documents shows how regulators attempted to incorporate values into scientific analysis while maintaining demands for veracious, universal, and authoritative knowledge. Fifty years later, upon declassification, concerns about how regulators managed values in science lead to renewed concerns that the government had been involved in a "cover-up."

I review this controversy not to provide an answer to the New Demarcation Problem, but to illustrate how different proposals trade off one virtue for another and to argue that none of the current proposals is successful in achieving all three of the purposes that justified the value-free ideal. To be clear, identifying the intended purposes of the value-free ideal is not to claim that a value-free science does serve those purposes. Nor do I endorse the claim that these purposes are the right purposes for scientific inquiry. My goal is only to clearly formulate and provide a standard for answering The New Demarcation Problem. Specifically, any criteria that claims to identify the permissible use of values in science should be able to specify how such a demarcation produces a veracious, universal, and authoritative science or argue that one or more of these purposes were bad purposes, or that they have since become bad purposes, or that they are purposes which are no longer being served.