

Book Review: Philip Kitcher's "Science in a Democratic Society"**

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The current relationship between science and democratic decision-making is clearly not as close as it could – or should – be. In *Science in a Democratic Society*, Philip Kitcher presents an account of their ideal relationship, building on his previous work (particularly Kitcher 2001 and Kitcher 2011). In the first few chapters, he outlines the problems that face attempts to integrate scientific expertise with democratic values and develops an account of the sorts of values that should be considered. Drawing on his work in *The Ethical Project* (2011), Kitcher suggests that ethics should be viewed as a social technology that allows us to overcome “the incompleteness and unreliability of our altruistic tendencies” (p. 47), but emphasizes that as society has changed, so have the problems that our ethical deliberations must address (Chapter 2).

Chapter 3 turns to a characterization of democracy, which he says should best be understood in terms of a way to promote the ideals of freedom and equality; these ideals have value insofar as they allow the members of a society to pursue their own projects in life. Kitcher emphasizes, however, that those projects are inherently social, so that political theories that emphasize only freedom from interference are inadequate. Following Dewey, he says that “[a] guarantee of your own personal protected space – and no more – provides an opportunity for only a stunted life” (p. 69). In order to create a society that is conducive to the pursuit of common projects, citizens must be able to participate meaningfully in the political decisions that affect them. And in order for this kind of participation to occur, there must be a healthy system of public knowledge that allows informed participation. Central to this public knowledge is science. Kitcher provides an account of the development of our current, inadequate, system of public knowledge in Chapter 4.

Chapters 5 through 8 form the core of the book, which is an expanded version of Kitcher's concept of well-ordered science (Kitcher 2001) and a theory of the role that science should play in a democratic society. Kitcher views a healthy system of public knowledge (which includes scientific knowledge as an important part) as necessary to guard against “unidentifiable oppression”, which occurs when people's freedom is hampered, whether they know it or not, because of the effects of policy decisions. In order to understand the consequences of these decisions, we need the combined insights of experts in different fields and of individuals whose freedom will be affected by

the decisions in various ways. Kitcher's main purpose in this book is to find a way to integrate expert opinion with democratic values.

Chapter 5 develops Kitcher's concept of "well-ordered science" (first introduced in Kitcher 2001). On Kitcher's account, "science is well-ordered when its specification of the problems to be pursued would be endorsed by an ideal conversation, embodying all human points of view, under conditions of mutual engagement" (p. 107). Participants in this conversation must have an understanding of the types of research under consideration and their various possible outcomes, both in the narrow sense of how the results of research might contribute to scientific knowledge and in the broader sense of how these results might affect particular groups of individuals or society as a whole. They must also take account of others' needs and preferences, as well as of their own, which requires that they must both learn about others preferences and modify their own to accommodate them. Several kinds of plan might result from such a conversation: there may be a plan that everyone involved in the conversation agrees is best; there may be a plan that everyone views as at least acceptable; or there may be no such plan, in which case the matter should be settled by voting (p. 115).

This sketch of well-ordered science is, of course, an ideal, and Kitcher recognizes that it is impossible, but hopes that understanding the ideal situation can "help us to improve our practice" (p. 116). Yet he also recognizes that even to be able to specify procedures for bringing practice in line with the ideal requires empirical information that is currently unavailable. He does suggest two general strategies for improving the public's understanding of science. First, scientists should be encouraged to communicate their research to the public – and we should recognize and encourage scientists and science journalists who have a talent for doing so. Second, selected members of the public should be brought "behind the scenes" so that they can learn more about a research area and therefore be better able to determine what kinds of research will best contribute to social goals.

Much of this discussion is an elaboration of earlier work, but Kitcher also extends his theory into new areas. Of particular interest is the discussion in Chapter 6 about public involvement in "certifying" scientific claims. Kitcher argues that there is a role for the public not only in deciding the agenda for scientific research, but also for deciding when the results of scientific research should be added to the store of public knowledge. He is careful to establish that he does not want to endorse a sort of "mob rule" on which people simply vote on whether they want to accept a scientific result. But he follows Feyerabend in arguing that scientific judgments should be scrutinized by a broader community. In essence, Kitcher calls for greater transparency with regard to the reasoning behind scientific conclusions, but he emphasizes that the ideal deliberators of his theory would (unlike the mob) be responsive to rational explanations of why a particular theory or result was accepted by scientists.

Yet Kitcher also recognizes that there are cases in which the standards used by the public, or some part of the public, should *not* be accepted, either by scientists or as part of a position that needs to be included in the public debate. One clear example of such

a situation is the rejection of evolutionary theory by some Christian groups. Kitcher suggests that these groups have a “chimeric” epistemology, since they are willing to accept scientific methods and theories in some areas but not in others. His response to such cases is that the reasons for the denial of evolutionary theory, for example, are simply not acceptable to the broader community. Because of this, he argues that while it is acceptable to put forward claims in a public discussion “that accord with religious beliefs... *defense* of those claims must be free of any reliance on the tenets of a religious tradition” (p. 161). Public reason – that is, the standards acceptable in a public discussion – should be secular, so that people who do not accept religious beliefs and standards do not end up bound by policies based on those standards.

Chapter 7 looks at issues that arise in the context of applying the results of scientific investigations in public policy. Kitcher suggests that, compared with the issues discussed in the two preceding chapters, application is relatively easy. Problems may arise, however, when the situation addressed by the original scientific research has changed because of the time required to conduct the research (p. 16). Chapter 8 takes up the issue of diversity within scientific communities, which involves researchers taking different approaches to solving a scientific problem. Although Kitcher does not discuss any connection between the issues of diversity and of application, both of these discussions require more attention to the challenges posed by recent work in philosophy of science that emphasize pluralism over unity of science and that recognize that the results of scientific research do not always translate nicely into other (including “real world” contexts). While Kitcher cites some of the philosophers who have addressed these issues (notably John Dupré, Alison Wylie, and Nancy Cartwright), he does not discuss their work in detail and thus may not have taken into account its implications for his theory. These philosophers and others emphasize that science is characterized, and best served by, a plurality of approaches. Kitcher, on the other hand, says: “When matters are up in the air, when a problem is not yet solved, diversity is welcome, including diversity of opinion, diversity of judgments of significance, and even diversity of standards of certification... Once the problem is resolved, the community should unite and build on the achievement; further diversity on the issue would now be wasteful” (p. 203).

Kitcher does not address the question of what happens when (as proponents of pluralism emphasize) different approaches are better for different things and there is no clear resolution (nor likely to be one) in favor of one approach. Kitcher discusses the example of a clear scientific problem that was answered in a decisive way, that of the structure of DNA. But questions about public health strategies, or education programs, or economic policy are not as clear, in that what counts as an answer to a scientific question depends crucially on the way in which the problem is framed, and in which research that makes the question tractable may require simplifications and assumptions that ensure that the answer to the question cannot be applied directly outside of the experimental context in which it was determined. Moreover, the distinction between efficacy and effectiveness, for example, shows that a clear scientific result does not necessarily translate into good policy. In short, Kitcher seems to assume that diversity in science will resolve into a generally-accepted set of methods and knowledge and that

this resolution will result in knowledge that is directly useful for policy, but there is good reason to think that this will occur only rarely.

The final chapter of the book considers several cases in which Kitcher's framework could be implemented to solve current controversies and problems. The four cases are, ordered by their increasing urgency, the "controversy" over Intelligent Design as an alternative to evolutionary theory; the potential uses of biomedical technology; the opposition to the development of genetically modified organisms; and the denial of climate change. For each of these examples, Kitcher provides a brief sketch of how these problems might be advanced. Although the analyses are promising, it would have been interesting to see a deeper and more detailed assessment of any of them; this is what will be required to see how well some version of Kitcher's ideal theory can be put into practice.

References

Kitcher, Philip. 2011. *The Ethical Project*. Cambridge MA: Harvard University Press.

Kitcher, Philip. 2001. *Science, Truth, and Democracy*. New York: Oxford University Press.