

## Critical reflections on recent philosophical views about public participation in science

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Philosophers of science have recently called for the abandonment of the traditional, context-independent view of the ends of science. Rather than aiming at coming up with a single and complete account of nature, science is now widely seen as providing accurate but partial representations that respond to the particular needs and interests, both practical and epistemic, of a society at a given time. An immediate consequence of this context-dependent view of the ends of science is that *the definition of scientific research programs can no longer be left to the scientists only*. The issue of public participation in the formulation of science and technology policies is thus emerging as a pressing concern for contemporary philosophy of science. The most influential recent attempt at addressing this concern has been made by Philip Kitcher who, in his book *Science, Truth and Democracy* (2001) proposes the normative concept of "well-ordered science" to capture what a democratic organization of scientific research should look like.

My main aim is to offer a critical analysis of this ideal of well-ordered science and to suggest ways of improving it. I will first set out the main lines of the concept of well-ordered science, focusing on how exactly Kitcher conceives participatory approaches in science, and then I will voice two distinct critiques, one about the ability of Kitcher's scheme to cope with the existence of scientific uncertainties, and the other about its ability to respond to feminist concerns about gender-biased science.

In a nutshell, the underlying general thesis in Kitcher's scheme of well-ordered science is the following: the aim of science is not restricted to the attainment of epistemic goals; epistemic values must be balanced against practical values in the setting of research agenda. In other words, science is to promote a collective good that includes epistemic as well as practical goals. Moreover, this collective good should not be defined in an objectivist way. It should rather be defined as the collective aspirations that would emerge from an ideal procedure of deliberation which gathers the "*tutored*" personal preferences of the citizens, thereby taking into account the interests of all groups of a society. A situation of well-ordered society requires thus reliable procedures for setting research agenda that can maximize the expected collective utility as it would be assigned as the product of an ideal deliberation. A key ingredient in this optimization problem is the probability functions adopted for the attainment of the ends embodied in the expected collective utility. For Kitcher, these means-ends relations are assessed by experts. So far so good. But what happens if the experts disagree or, worse, if, given the current state of knowledge in a scientific field, they just don't know.

By raising the specific question of the role of scientific expertise in an ideal process of deliberation as conceived by Kitcher, I explore and question the ability of such a process to fulfil its aim in a state of well-ordered science, *given the existence of genuine scientific uncertainties*. I consider first the impact of scientific uncertainties on the range of options available in an ideal deliberation and illustrate my point with concrete examples. These examples suggest that

relying, as Kitcher does, on the presentation of pertinent structure of inquiry nets to make informed decisions on a research agenda is likely to leave aside certain options, because of a lack of scientific interest to investigate these options due only to scientific uncertainty. I then consider another effect of scientific uncertainty on ideal deliberations, to wit, how ill-defined risks affect the building of tutored preferences. I show in particular that the existence of ill-defined risks, along with other factors, tends to allow to incorporate in the debate considerations that in principle do not enter in an ideal deliberation as conceived in the standard of well-ordered science: uncertainty opens up a public debate that ends up encompassing much broader concerns than an ideal deliberation would do. This enlargement of the debate makes it problematic to conceive the collective good as the product of an ideal deliberation based on tutoring of preferences. Unless tutored preferences encompass pure political concerns. But then the standard of well-ordered science cannot be conceived without an explicit account of what a well-ordered society should be (an account that Kitcher does not provide).

The second worry I want to voice concerns the ability of Kitcher's scheme to respond to feminist agenda in philosophy of science. Feminist philosophical critics of science take a number of different forms. Especially challenging is the feminist attack against the epistemic integrity of science, that is, its capacity to screen out the influence of « contextual » (i.e. social, political, cultural values) values on its content. Feminist critics contend that cases of gender-biased research cannot be simply discarded as mere cases of « bad » science: a better application of the usual rules of acceptable practice, it is claimed, won't suffice to correct such biases. A pressing task for feminists is then to attend to how science should be organized, given this influence of contextual values on the very content of science, to maximize epistemic success and minimize sexist biases. I explain why Kitcher's standard of well-ordered science fails to address feminists worries and, building on previous work in feminist epistemology (Ruphy 2006), I suggest ways of complementing it to fulfil the feminist agenda. I conclude by discussing concrete implications of the ideal of well-ordered science for policy and practice.

## References

Kitcher, P., 2001. *Science, Truth and Democracy*. Oxford: Oxford University Press.

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