

ment. It is recommended for reading not only by students and experts in STS, but also by all practitioners involved in policy decision-making processes.

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Toward a Philosophy of Science Policy: Approaches and Issues.
(Ed. Robert Frodeman and Carl Mitcham).
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Philosophy Today, a major North American forum for continental philosophy, recently published a supplementary issue on the theme of philosophy of science policy. There are two reasons for reviewing this volume rather than a book on the same topic. First, the theme is pertinent as it addresses a considerable lacuna in the academic literature, and second, hardly any books exist on the topic. The central concern of all the 24 authors of the volume is that, in addition to various, already existing, academic fields that study science (and technology), a special philosophy of science policy is needed.

The articles in the issue address a host of intriguing topics. They include, for instance, G.W. Bush's council on bioethics and its stance on stem cell research (Eric Cohen), social benefits of applying Linux-based Linex in the Spanish Extremadura region (Andoni Alonso *et al.*), scientific citizenship (Kristin Shrader-Frechette), autonomy of science (Philip Kitcher), humanities policy (Frodeman *et al.*), nationalistic ethos in science education policy (Juan Lucena),

a wider view on the social context of science policy (Daniel Sarewitz *et al.*), and a political philosophy of science (Ambrosio Velasco Gómez). The authors represent seven countries and more than dozen disciplinary backgrounds. More than half of the articles are co-authored. They consist of both empirical case studies and theoretical approaches. This is no accident, claim editors Carl Mitcham and Robert Frodeman, but reflects the inter-disciplinary, collaborative, and global character of the field they attempt to advance.

Mitcham and Frodeman point out that the need for such a branch of philosophy becomes evident when one notices certain absences in the already existing "neighboring" fields. These include the philosophy of science, science and technology studies, policy studies, political philosophy, applied ethics, and philosophy of technology. Mitcham and Frodeman note that philosophy of science is somewhat blind to the societal and political embeddedness of science. Science and technology studies that do pay attention to these conditions are in

their present phase, however, reserved when it comes to political, ethical, or other normative stances. Relevant fields of applied ethics, research ethics for instance, attempt to solve actual ethical questions and give normative recommendations, but consider few larger policy issues and extend little or no attention to science and technology as societal forces. Policy studies that look at actual policy practices make use of a large variety of natural and social sciences. Philosophy and other traditional humanities, however, are absent in the approach of policy studies. Observing these absences, the editors call for a multi-disciplinary approach that they name philosophy of science policy.

Socio-historical developments have opened the space for the reflection that the editors and authors call for. In short, they describe situation as follows. The end of the Cold War in the beginning of 1990s loosened the military and ideological predicament that, since the Second World War, had a formative impact on science and technology policy in the U.S. This loosening enabled new kinds of queries after the goods that science provides for the society. The strongest candidates for these goods have been human health and environmental sustainability. Investments in medical research, however, raise questions on whose health is given the first priority. Feminists, for instance, have paid attention to the fact that more money is spent on prostate cancer than on breast cancer research, although the latter is more liable to be lethal to the patient. Moreover, some people have argued that since a large percentage of the cancers result from environmental degradation, less research-oriented methods, such as pre-

vention of the pollution and restoration of the contaminated areas, would give better results than the same investments in high-tech research. This applies to many research fields in ecology as well. Billions spent in research on climate change have done nothing to prevent the phenomenon itself, and according to some opinions, have in fact, only clarified our real understanding of the global climate very little. The Bush administration's policies and the developments after September 11 have brought these questions into new light.

What is philosophy of science policy, then, in practice? Mitcham and Frode-man list as its key concerns the following: logical and rhetorical analysis of policy methods, ethical thinking about the relationship between scientists and the public, justice issues both within the scientific community and between it and society at large, epistemological strengths and weaknesses of policy models, and ontological questions concerning scientific institutions. These concerns are achieved through a quite straightforward method. The editors conceive philosophy as logic, ethics, epistemology, ontology, and other traditional sub-disciplines. Then they arrive at the above concerns by looking at how these sub-fields intersect with some of Harold Lasswell's (*A Pre-View of Policy Sciences*, 1971) tasks of the policy sciences: "clarification of the goals; descriptions of trends; analysis of conditions; projection of future developments; and invention, evaluation, and selection of alternatives" (Frodeman and Mitcham, p. 9).

The articles in the issue offer a number of approaches and concerns. One wonders to what extent they fall under the

editors' research program in philosophy of science policy. Parallel themes, such as making the aims of science policies explicit and attempting to set those aims in wider perspectives than national security or mere economic growth, nevertheless, cut through the papers in a satisfying manner. This is rewarding given the large variety of disciplinary backgrounds and schools involved. Somewhat less satisfying, however, is the subtle U.S. centeredness of the issue. Although the authors and the themes represent many nations and continents, I still find the framework and the problematic to be U.S. centered. I agree that on the European continent in general there is a need for philosophy of science policy as well. Yet the tasks for requisite thinking and research are somewhat different for developed countries outside the U.S. In Finland, for instance, science is perceived far less politically than in the U.S. In Europe, furthermore, there are no real debates on intelligent design or questioning of climate change, which are visible examples of (attempted) political/ideological construction of science in America.

I conclude with a brief return to the method of the proposed field. As a second possible starting point, an alternative to the traditional philosophical sub-disciplines, Mitcham and Frodeman suggest that philosophy of science policy can be conceived of as policy research. They do not elaborate much on this option. I wonder, however, if one would need a third, more radical, approach. To what extent do we have to rethink traditional philosophical categories for this project? How well does philosophy simply intersect with contemporary policy questions? I think the editors implicitly

point in a third direction when they acknowledge Larry Hickman's work in philosophy of technology (*Philosophical Tools for Technological Culture*, 2001). Hickman makes use of unrealized possibilities within pragmatist thinking to address technology and policy issues. His approach involves recasting central philosophical categories such as the theory/practice and fact/value distinctions. Moreover, I wonder whether Bruno Latour's recent work (e.g., *We Have Never Been Modern*, 1993/1991, *Politics of Nature*, 2004), which includes rethinking the nature/society distinction and exotic reflections on an ontological category of hybrids, might offer a more radical avenue. Latour's position is strong, however, and may not be a suitable starting point for a new field.

All in all, this issue is a remarkable opening, since the need for philosophy of science policy is evident and these articles show the branch at work. A book on the topic by the authors would be a much-welcomed follow-up.

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