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0521275601 - Scientific Controversies: Case Studies in the Resolution and Closure of Disputes in Science and Technology

Edited by H. Tristram Engelhardt and Arthur L. Caplan

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This collection of essays examines the ways in which disputes and controversies about the application of scientific knowledge are resolved. Four concrete examples of public controversy are considered in detail: the efficacy of Laetrile, the classification of homosexuality as a disease, the setting of safety standards in the workplace, and the utility of nuclear energy as a source of power. The essays in this volume show that debates about these cases are not confined to matters of empirical fact. Rather, as is seen with most scientific and technical controversies, they focus on and are structured by complex ethical, economic, and political interests.

Drs. Engelhardt and Caplan have brought together a distinguished group of scholars from the sciences and humanities, who sketch a theory of scientific controversy and attempt to provide recommendations about the ways in which both scientists and the public ought to seek more informed resolutions of highly contentious issues in science and technology. *Scientific controversies* is offered as a contribution to the better understanding of the roles of both science and nonscientific interests in disputes and controversies pertaining to science and technology.

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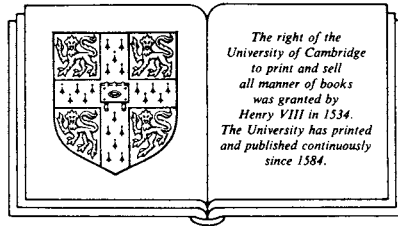
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Scientific controversies

*Case studies in the resolution and closure of disputes in science
and technology*

EDITED BY
H. TRISTRAM ENGELHARDT, JR.
AND
ARTHUR L. CAPLAN



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PREFACE

Contemporary societies take science seriously. They presume that science can resolve disputes over factual issues such as the question of whether Laetrile should be used to treat cancer, whether homosexuality is a disease, whether nuclear power is safe, or whether a particular concentration of benzene in the workplace is tolerable. Such disputes are, however, not purely “scientific,” as the essays in this volume show. They are formed around and structured by complex ethical and political interests. In fact, more than purely knowledge-directed concerns shape scientific controversies generally, even those concerning the theory of continental drift. A better understanding of the interplay between knowledge-directed and value- or politically directed forces in scientific disputes is required for an appreciation of the very character of culture. Ours is a culture that looks to scientific investigations, panels, and commissions for the determination of facts and the resolution of scientific disputes. This volume is offered as a contribution to the better understanding of the role of science and of the place of nonscientific interests in what may appear, at first glance, to be purely scientific undertakings.

The original conferences and research that produced this volume were supported by a grant from the National Endowment for the Humanities (No. AV-30691-78-200). This project, which addressed the character of scientific disputes with a heavy ethical or political overlay, spanned the years 1978–82. We wish to underscore our debt of thanks to the Endowment and, in particular, to Richard Hedrick, who served as the program officer for the grant. His guidance contributed in many ways to the successful completion of the project. The conference and research group meetings also benefited from the contributions and participation of a great number of individuals to whom the editors of this volume acknowledge their gratitude. These include Garland E. Allen, Jane L. Backlund, Thomas Bartosiewicz,

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From 1982 to early 1984, the materials developed from the project have been worked, reworked, and transformed into the essays of this volume. This has involved integrating the results of a number of different studies on the nature of scientific controversies: (1) case studies of controversy, such as the use of Laetrile in cancer treatment, the classification of homosexuality as a disease, the safety of nuclear power, and the assessment of risks in the workplace; (2) the role of journalism in articulating scientific disputes; (3) the place of arbitration in resolving scientific disputes; and (4) the general intellectual assessment of the nature of scientific disputes that possess a heavy ethical and political overlay. This has also involved controversies among participants in the project regarding the nature of controversies. This volume is unlikely to quiet controversies among its readers, but we hope that it will enhance their appreciation of the subject.

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