

Herbert Gottweis

Governing Molecules

The Discursive Politics
of Genetic Engineering
in Europe and
the United States

Governing Molecules

Inside Technology

edited by Wiebe E. Bijker, W. Bernard Carlson, and Trevor Pinch

Marc Berg, *Rationalizing Medical Work: Decision-Support Techniques and Medical Practices*

Wiebe E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*

Wiebe E. Bijker and John Law, editors, *Shaping Technology/Building Society: Studies in Sociotechnical Change*

Stuart S. Blume, *Insight and Industry: On the Dynamics of Technological Change in Medicine*

Geoffrey C. Bowker, *Science on the Run: Information Management and Industrial Geophysics at Schlumberger, 1920–1940*

Louis L. Bucciarelli, *Designing Engineers*

H. M. Collins, *Artificial Experts: Social Knowledge and Intelligent Machines*

Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America*

Herbert Gottweis, *Governing Molecules: The Discursive Politics of Genetic Engineering in Europe and the United States*

Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity after World War II*

Eda Kranakis, *Constructing a Bridge: An Exploration of Engineering Culture, Design, and Research in Nineteenth-Century France and America*

Pamela E. Mack, *Viewing the Earth: The Social Construction of the Landsat Satellite System*

Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*

Donald MacKenzie, *Knowing Machines: Essays on Technical Change*

Susanne K. Schmidt and Raymund Werle, *Coordinating Technology: Studies in the International Standardization of Telecommunications*

Governing Molecules

*The Discursive Politics of Genetic Engineering in
Europe and the United States*

Herbert Gottweis

The MIT Press
Cambridge, Massachusetts
London, England

© 1998 Massachusetts Institute of Technology

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from the publisher.

Set in New Baskerville using Ventura Publisher under Windows 95 by Wellington Graphics.

Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Gottweis, Herbert, 1958–

Governing molecules : the discursive politics of genetic engineering in Europe and the United States / Herbert Gottweis.

p. cm. — (Inside technology)

Includes bibliographical references and index.

ISBN 0-262-07189-4 (hardcover : alk. paper)

1. Genetic engineering—Government policy—Europe. 2. Genetic engineering—Government policy—United States. I. Title. II. Series.

TP248.6.G68 1998

338.9'26—dc21

98-25670

CIP

Contents

Acknowledgements vii

Introduction 1

1

What Is Poststructuralist Science and Technology Policy

Analysis? 11

2

Molecular Biology and the Rewriting of Life: Origins of American and European Genetic Engineering Policies 39

3

Molecularizing Risk: The Asilomar Legacy in the United States and in Europe 77

4

Myths, Industries, and Policies of Biotechnology: Between Basic Research and Bio-Society 153

5

Deconstructing Genetic Engineering 229

6

Hegemonic Crisis and the Remaking of Regulatory Space in Europe 263

vi Contents

7

***Genetic Engineering, Identity Politics, and Poststructuralist Policy
Analysis 323***

Notes 341

Interviews Conducted, 1988–1992 369

Bibliography 372

Index 395

Acknowledgments

The idea of writing this book began to take shape in 1988. As an avid reader of the British *Financial Times* and of the German *Tageszeitung*, I noticed in 1987 that both newspapers had greatly extended their coverage of topics related to genetic engineering. While the *Financial Times* was excited about the commercial prospects of biotechnology and warned about too much regulation, the alternative-green *Tageszeitung* emphasized genetic engineering's risks and its unforeseeable environmental and social impacts and demanded strict laws to control the hazards of recombinant DNA. A fascinating conflict seemed to be in the making. I felt that I should follow the events and try to write a book on the unfolding political controversy about biotechnology.

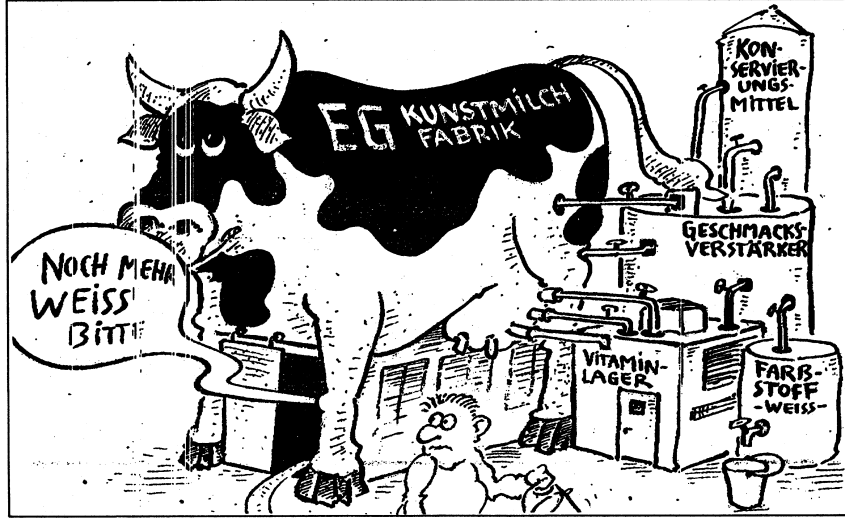
Interviews with more than eighty individuals in science, government, business, and social movements in four countries were my central method of exploring the genetic engineering conflict, its history, its dynamics, and its actors. The interviews provided me with fascinating firsthand accounts of the everyday life of biotechnology policy-making. Furthermore, most of my interviews had the important side effect of helping me to get access to written documents, including internal correspondence, memos, and minutes. Without those documents many portions of this book could not have been written. I want to thank my interview partners in Britain, France, Germany, and Belgium for their time, their patience, and their interpretations of biotechnology policy.

Invaluable help came from Bernhard Zechendorf, the person in charge of BIODOC, the biotechnology documentation center located at the European Commission's Directorate General for Science, Research, and Development. BIODOC's unique collection of documents, scientific papers, newspapers, and journal reports related to biotechnology helped me to reconstruct some important stories.

The Gen-ethische Netzwerk in Berlin was an important source of information and helped me get my orientation in the jungle of biotechnology.

During the academic year 1989–90, the Minda de Gunzburg Center for European Studies at Harvard University was a perfect place to get some distance from my first round of fieldwork and to think about the historical dimensions of the politics of molecular biology. Discussions at the de Gunzburg Center with Peter Hall and Pnina Abir-am were inspiring and gave me new insights. Financial support for my stay at the de Gunzburg Center came in form of an Erwin Schrödinger Fellowship from the Austrian Ministry of Science. During my time in Cambridge I also met Charles Weiner from MIT's Program in Science, Technology, and Society. His brilliant understanding of the tension between biotechnology and society and his friendship helped to make this book possible. I also benefited greatly from his earlier work on the beginnings of the genetic engineering controversy in the early 1970s, and particularly from his collection of interviews and documents in the Recombinant DNA History Collection at MIT's Institute Archives and Special Collections. In 1992–93, having finished my interview work in Europe, I wrote the first draft of the book at MIT under the auspices of the Program in Science, Technology, and Society. Support during that year came from Andrew Mellon Foundation. Between 1993 and 1995, Cornell's Department of Science and Technology Studies provided a perfect setting for putting together a second draft of this book. My colleagues Sheila Jasanoff and Peter Taylor were creative commentators on my work. The undergraduate and graduate students in my courses helped me to test and elaborate many of my ideas and interpretations. During my time at MIT and Cornell, Lily Kay, whose pathbreaking work on the history of molecular biology had helped me to understand today's genetic engineering controversy, was a constant source of support, encouragement, and inspiration. Volkmar Lauber of the political science department in Salzburg was an always open but critical reader of my manuscript. Hans-Jörg Rheinberger of the genetics department helped me to develop a deconstructivist reading of the science of genetic engineering. Rogier Holla, Bernhard Gill, Les Levidow, and Timothy Young commented on the whole manuscript. The final draft was written in 1997 at the Hong Kong University of Science and Technology, where my stay was organized by Govindan Parayil.

Governing Molecules



Introduction

In its June 1989 issue, the German farmers' magazine *Bauernstimme* published a feature on rBST, a new hormone drug that was soon to be launched on the market by the US-based multinational corporation Monsanto. Bovine somatotropin (BST) is a natural protein produced by the pituitary gland of cattle; rBST is a recombinant form of the protein developed with the help of genetic engineering. Added to feed, rBST promised a substantial increase in milk output per cow. Nevertheless, *Bauernstimme* was not enthusiastic about the drug. It reported considerable concern among farmers (especially small farmers) that rBST might have a negative effect on the quality of their cows' milk and on their economic future. A survey showed that more than 80 percent of Germany's dairies were not prepared to use rBST. These concerns were summarized in a cartoon showing an oversize cow that seems to be part of a factory. The cow is identified as a "European Community artificial milk factory." Pipes connect its body to containers labeled "preservatives," "vitamins," and "artificial color." A factory worker shouts "More white please!"

In the eyes of Monsanto, Germany's Bundesministerium für Forschung und Technologie (Ministry of Research and Technology) and other actors, the notion that rBST collapsed the boundaries between animals and technology constituted a gross exaggeration that could not be justified on scientific and technical grounds. In Monsanto's or the Bundesministerium's representation, rBST—a substance readily available in a cow's body—was simply being "enhanced" by technical means, and rBST milk was as natural as any other milk.

Thus, while Monsanto and the Bundesministerium saw nature when they looked at rBST, *Bauernstimme* and the farmers saw technology. From the perspective of the chemical company or the

Bundesministerium, rBST was a safe and useful product; from the perspective of many farmers, it was a potentially unsafe substance that might have unpredictable socio-economic consequences. Such differences in describing what might seem to be an objective artifact can render the consensual selection of policy options difficult indeed.

The importance of the multiplicity of meanings attributed to phenomena in the policy process becomes even clearer when the rBST debate is contextualized as part of a larger controversy over genetic engineering in the United States and in Europe. In the late 1950s and the early 1960s, the new biology that would eventually lead to the development of recombinant DNA techniques had already become an object of systematic state support. Shortly after genetic engineering became available, comprehensive policies for research in biotechnology and for the biotechnology industry were developed in Germany, in France, and in Britain, and also at the level of the European Community. In the United States, support for molecular biology focused mainly on providing a research base for the emerging biotechnology industry. On both sides of the Atlantic, scientists, administrators, and company heads hailed biotechnology as something that would significantly affect the future competitiveness of nations and trading blocs.

At the same time, critics pointed to potential risks for humans, animals, and the environment posed by work with recombinant DNA. While some perceived genetic engineering as a technology of the future, others saw it as a source of potential disaster. From the mid 1970s until the mid 1980s, the public policies developed in Germany, France, Britain, and the United States attempted to combine state support of genetic technology with regulation. In the United States the recombinant DNA controversy had peaked in the mid 1970s. In Europe it was in the mid 1980s that the conflict culminated in demands for more stringent regulations of genetic engineering, for a broader consideration of the ethical, ecological, economic, and political implications of genetic engineering, and even for the banning of certain products (including rBST) in the European Community. Far from being settled, the debate over genetic engineering continues today in various fields, from genetic testing to the cloning of sheep. The goal of this book is to explain how genetic engineering became a controversial technology that some sought to promote by any means and others sought to block entirely.

The Need for a Poststructuralist Approach

In this book I outline a conceptual framework for policy analysis inspired by poststructuralism and apply it to the study of policy-making—in particular, to the comparative analysis of regulatory and technology policies. For social scientists the most important analytic message of poststructuralism may be the need to pay careful attention to the complicated ways in which language and discourse are used to constitute social, economic, scientific, or political phenomena, to endow them with meaning, and to influence their operation. Accordingly, I interpret the genetic engineering controversy as a process that was inseparable from the mapping—the social construction—of the political, economic, and scientific worlds. I emphasize the importance of interpretations, framings, and definitions in the construction of reality, subjectivity, and identity in the realms of science and politics. That is, I argue that there is a need to examine how discourses and narratives—stories that create meaning and orientation—constitute the policy field of genetic engineering. What are the parameters of state regulation? What counts as a rationale for state support? Who is constructed as a legitimate actor in a policy field? Which institutions are defined as central in a policy field? How is the boundary between state and civil society defined and regulated? Which strategies demarcate science from nonscience, and how does scientific knowledge contribute to the shaping of social identity? While my approach underscores the importance of language and knowledge for political analysis, it does not lose sight of actors and institutions; I argue, however, that actors and institutions must always be analyzed in close association with the discourses in which they are constituted and with the policy stories that define the logic, the actors, and the institutions that matter in a policy field.

Poststructuralism has had a considerable impact on a number of disciplines, including history, science studies, and cultural anthropology (Frank 1989; Lenoir 1994; Rosenau 1992). In political science, poststructuralist voices have become particularly important in the subfields of international studies and political theory (Gooding and Klingemann 1996, pp. 21–22; George 1994). Other fields, including comparative political studies, have remained relatively untouched by this new approach and continue to look at politics through a lens narrowed by realist epistemology and positivist methodology.

Conventional political science views policymaking as a struggle between competing groups, as a game played by rational actors, or as determined by institutional structures. The approach developed in this book is critical of the assumption that we can simply assume the “existence” of actors and structures in politics. Furthermore, I question the narrow understanding of “the political” underlying traditional political science approaches. Following a broader understanding of “the political,” I suggest conceptualizing the process of policymaking as situated at the intersection between forces and institutions deemed “political” and those apparatuses that shape and manage individual conduct in relation to norms and objectives but are deemed “non-political,” such as science or education (Rose 1996, pp. 37–38). Instead of assuming stable boundaries between sectors such as politics, the economy, and science, this approach moves the creation of such boundaries—the micropolitics of boundary drawing—to the center of analytical interest.

This theoretical perspective has a number of important implications for my conceptualization of the main research problems of this book. The “politics of genetic engineering” cannot be reduced, for example, to citizens’ pressing for the regulation of recombinant DNA technology. A “politics of genetic engineering” is also taking place when, for example, scientists carry out certain experiments in genetic engineering and subsequently make claims with respect to the significance of this work for the understanding of nature and of human behavior. Arguing that such different articulations of the “politics of genetic engineering” are interrelated, I describe the working of a more complex, multiple regime of governability—a system of fields and sites ranging from laboratories to parliaments where strategies focused on the manipulation of genetic material were deployed and negotiated. Guided by this understanding of “the political,” I analyze policymaking against the backdrop of a constellation of locations where different strategies have been pursued to turn genes into objects of technological and political intervention—to make them “governable.”

While this book’s understanding of politics is broad, its analytical focus is on policymaking. I show how, through the mutually reinforcing relationships between various “political” and “nonpolitical” forces, genes were construed not only as objects for technological manipulation but also as legitimate concerns for regulatory efforts and for state support. The following questions are addressed: How did molecular biology and genetic engineering become objects of state intervention?

How and with what impact did risk emerge as a major topic in the politics of genetic engineering? Which arguments framed and constructed genetic engineering as a technology of the future that would have a deep impact on socio-economic development? What is the relationship between eugenics' and molecular biology's conceptualization of properties of life and genetic factors? How can we explain the strong resistance to genetic engineering in Europe in the 1990s? What lessons can we draw from the study of genetic engineering politics concerning how national political systems and the newly emerging political system of Europe handle the deep and pervasive transformations and challenges introduced by modern science and technology? Are these processes of technological transformation guided by principles of negotiation and compromise? Or has decisionmaking on scientific development and its economic exploitation become a form of "subpolitics" (Beck 1993) that is removed from the scrutiny of democratic institutions and suffers under a chronic deficit of political legitimization?

In dealing with these questions we are constantly confronted with problems of meaning, interpretation, and definition. For instance, the importance of potential hazards associated with genetic engineering for the development of regulatory policies cannot be denied—but what exactly constitutes such a hazard, and how is its interpretation socially constructed? In a similar way, it seems to be obvious that international competitiveness is a major reason for state support of biotechnology—but what exactly does it mean to state that there is a technology race going on between nations? How is this image of competition being created, and what is its role in policy rationales? These questions address political issues and refer at the same time to broader contexts of culture and society. What matters are definitions of the "truth" of a problem, a challenge, or a solution—in other words, the drawing of the always flexible and contingent borders and territories of politics, science, and society. Such boundary constructions constitute important demarcations of power—for example, by separating science from processes of political shaping, or by attributing to experts (as opposed to representatives of the public) the exclusive authority to evaluate the environmental risks of genetic engineering.

This book's interest in boundaries and in the construction of meaning has much to do with an important transformation in contemporary life. Today's social conditions seem to be characterized by an overall sense of uncertainty, reflecting the absence of analytical and political

guarantees, the dissolution of privileged political positions and agents, and the coexistence of a plurality of political spaces and social logics through which various forms of social and political identity are constituted. One important expression of this “postmodern” constellation that has enormous implications for policymaking is the blurring of boundaries of phenomena in a variety of social and political sectors (Smart 1992, p. 219; Latour 1993). Examples include the increasingly unclear boundaries between experts and non-experts in scientific decisionmaking, the collapsing boundaries between nature and technology, and the great difficulty of drawing clear borders around the economy of the nation-state. Scientific expertise does not enjoy as much legitimacy as it did some decades ago. Frozen embryos seem to be a form of life but also a form of technology. Globalization undermines traditional functions of the nation-state. How is policy made under such new conditions? Does democracy still provide the space in which to negotiate the new demarcations of power? In this book I attempt to answer these questions by looking at the “politics of genetic engineering” in France, Germany, the United Kingdom, and the European Community. Although the focus is on Europe, I also examine a number of important developments in the United States. The European “politics of genetic engineering” is part of a larger political texture interwoven with images, developments, and myths of American biotechnology.

Outline

Rather than give a comprehensive overview of genetic engineering policies in the United States and Europe, I focus on episodes that help to explain how genetic engineering and biotechnology gradually emerged as objects of political intervention, how they became controversial, and how policymakers dealt with the various challenges they posed.

In chapter 1, I locate the approach I will use in the rest of the book within the current discussion about the comparative study of policymaking. I discuss several models that are important for the study of comparative politics, assessing their strengths and their limitations. Then I outline an alternative, poststructuralist framework—inspired by the work of Michel Foucault, Ernesto Laclau, and Chantal Mouffe and by recent work in science and technology studies—for the analysis of technology policymaking. This chapter underscores the importance

of discourse, knowledge, and narratives in both scientific and political practice, and it clarifies my understanding of policymaking. The argument that language and stories matter in politics also has important normative implications, as I will argue in the concluding chapter.

In chapter 2, I discuss how molecular biology policy came into existence as a new policy area. A number of mutually reinforcing developments explain molecular biology's rise as a topic of political interest in the United States and in Europe. I emphasize that molecular biology was always seen as more than just an interesting new field of basic science. Since the late 1930s the supporters and the critics of the "new" biology have emphasized that molecular biology is also a project of population politics. There are a number of interesting links between the "old" pseudo-science of eugenics and the "new" field of molecular biology. Eugenics focused on the "gene pool" as a site of intervention; molecular biology shifted its interest to individual genes. I discuss the relationship between eugenics and the new biology by looking at important transformations in US biology during the 1930s.

The focus of the book then shifts to Europe, where, from the late 1950s on, political discourse interpreted molecular biology primarily as a new scientific field of central importance for medicine, for industry, and for general social well-being. I show that in Europe the identification of molecular biology as an object of policymaking was predicated on the deployment of narratives that articulated molecular biology as an element in broader policies of modernization. Thus, a discursive link was created between ongoing processes of economic restructuring and discursive shifts in the discipline of biology. These policies of molecular biology set in motion a dynamic of technological development whose socio-political implications and relationship to eugenics would again become objects of public scrutiny and discussion only a few years later.

In chapter 3, I move on to the 1970s and to the semiotic construction of genetic engineering's risks as a field for regulatory policymaking. Immediately after recombinant DNA technologies were developed, they became objects of multiple ascriptions of meanings. Genetic engineering had raised highly difficult boundary questions about the relationship between nature and technology. What for some was the scientific basis of a new industry appeared to others a dangerous technological intervention that might even bring back eugenics in a new form. The evolving regulatory policies did not address the many ethical, social, and environmental concerns raised with respect to

genetic engineering; it focused mainly on the creation of a system of risk regulation. The new regulations also implied a specific and contested mapping of the boundaries among society, science, and politics that affected the procedures of regulatory decisionmaking. I argue that these regulations inscribed the risks of genetic engineering in a way that contributed to (rather than undermined) the framing of modern biotechnology as a socially acceptable technology of the future.

Chapter 4 shows how the interpretation of genetic engineering as a controllable technology and the creation of the myth of the US biotechnology industry became essential elements in the shaping of biotechnology policies in Britain, Germany, France, and the European Community during the 1980s. I argue that the dominant narratives of biotechnology contained a number of assumptions (about such things as the structure of international research and development in the pharmaceutical and chemical industry, the working of financial markets, and the current state of art in genetic engineering) that together gave meaning to the notion of biotechnology as a high-technology industry of the future. These assumptions soon turned out to be highly problematic and made implementation of the adopted policies difficult. At the same time, these policies also reflected significant ideas about how the new genetic technologies could help to bring about social transformation—the creation of a “Bio-Society.” This “bio-politics” and its relationship to older forms of bio-politics, such as eugenics, soon moved to the center of social conflict.

In chapter 5, which focuses on the many voices that have been strongly critical of genetic engineering, I argue that the European genetic engineering controversy of the 1980s must be understood in the context of a number of important contextual changes. The articulation of a new discourse of modernization oriented to ideas of ecology and sustainable development the emergence of a social movement sector organized around the topic of genetic engineering had created a new discursive constellation for policymaking. The critics compared molecular biology to eugenics and construed it as a strategy of cultural hegemony that could change and normalize the parameters of human self-recognition and the understanding of nature. Furthermore, deconstructive readings of the biotechnology policy narratives rejected the politics of connecting the collective identity and future of Britain, France, Germany, and Europe with the project of rewriting life through the new genetic technologies. Most important, this critique was also directed against a partitioning of the political space of biotech-

nology and against the construction of policy boundaries that separated regulatory topics from the discussion of research policies and from considerations of the ethical, social, economic, and political implications of biotechnology.

Chapter 6 shows how the discursive struggle over the boundaries separating genetic engineering, politics, and society defined the political dynamics of one of the most critical episodes in European biotechnology policy in the 1980s: the drafting of new risk regulations for the contained use and the deliberate release of genetically modified organisms in Germany, Britain, and France. These policies, which involved the establishment of a precautionary regulatory approach toward genetic engineering's risks, introduced significant elements of stabilization in the discursive field of genetic engineering. Although the environmental and health risks of genetic engineering could be negotiated to some extent in the context of the newly established regulatory structures, other topics of concern were still without a place where they could become objects of institutionalized contestation and deliberation.

Despite numerous attempts to end the debate, genetic engineering continues to be a highly controversial topic. In my concluding analysis of the relationship among genetic engineering, democracy, and identity construction, I emphasize the importance of creating a political space for the democratic negotiation of biotechnology. Failure to do so might lead to consumer boycotts against the biotechnology industry and to other forms of resistance. Finally, I emphasize that policymaking with regard to genetic engineering is a case in point which seems to indicate that, under postmodern conditions, policymaking can be successful only if it understands the need to mobilize existing institutional mechanisms and to set up new institutional mechanisms that will ensure tolerance of and respect for the multiplicity of socially available policy narratives and reality interpretations in a policy field.

Bibliography

Abbott, Richard J. 1994. Ecological Risks of Transgenic Crops. *Ecology and Evolution* 9: 280–282.

Abir-Am, Pnina. 1982. The Discourse of Physical Power and Biological Knowledge in the 1930s: A Reappraisal of the Rockefeller Foundation's "Policy" in Molecular Biology. *Social Studies of Science* 12: 341–382.

Abir-Am, Pnina. 1993. From Multidisciplinary Collaboration to Transnational Objectivity: International Space as Constitutive of Molecular Biology, 1930–1970. In *Denationalizing Science*, ed. E. Crawford et al. Kluwer.

Abir-Am, Pnina. 1992. The Politics of Macromolecules: Molecular Biologists, Biochemists, and Rhetoric. *Osiris* 7: 164–191

Adams, Mark B., ed. 1990. *The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia*. Oxford University Press.

Adams, Pamela. 1991. State Policy and the Chemical Industry in Western Europe. In *International Markets and Global Firms*, ed. A. Martinelli. Sage.

Adams, William James. 1989. *Restructuring the French Economy: Government and the Rise of Market Competition since World War II*. Brookings Institution.

Alonso, Ana María. 1994. The Politics of Space, Time and Substance: State Formation, Nationalism, and Ethnicity. In *Annual Review of Anthropology*, ed. W. Durham et al. Annual Reviews Inc.

Altner, Günter, Wanda Krauth, Immo Lünzer, and Hartmut Vogtmann, eds. 1988. *Gentechnik in der Landwirtschaft. Folgen für die Umwelt und Lebensmittelerzeugung*. C. F. Müller.

Altwater, Elmar, and Kurt Hübner. 1988. Das Geld einer mittleren Hegemonialmacht—Ein kleiner Streifzug durch die ökonomische Geschichte der BRD. *Prokla* 73: 6–36.

Andrain, Charles F. 1985. *Social Policies in Western Industrial Societies*. Institute of International Studies, Berkeley.

Atkinson, Michael M., and William D. Coleman. 1989. Strong States and Weak States: Sectoral Policy Networks in Advanced Capitalist Economies. *British Journal of Political Science* 19: 47–67.

Auchincloss, Stuart. 1993. Does Genetic Engineering Need Genetic Engineers? Should the Regulation of Genetic Engineering Include a New Professional Discipline? *Boston College Environmental Affairs Law Review* 20: 37–63.

Aujac, Henri. 1986. An Introduction to French Industrial Policy. In *French Industrial Policy*, ed. W. Adams and C. Stoffaës. Brookings Institution.

Bachrach, Peter, and Morton S. Baratz. 1963. Decisions and Nondecisions: An Analytical Framework. *American Political Science Review* 57: 632–642.

Ball, Simon, and Stuart Bell. 1994. *Environmental Law: On the Law and Policy Relating to the Protection of the Environment*. Blackstone.

Barthes, Roland. 1972. *Mythologies*. Hill and Wang.

Barthes, Roland. 1974. *S/Z*. Hill and Wang.

Battershill, Charles D. 1990. Erving Goffman as a Precursor to Postmodern Sociology. In *Beyond Goffman*, ed. S. Riggins. Mouton de Gruyter.

Baudrillard, Jean. 1976. *L'échange symbolique et la mort*. Gallimard.

Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. Sage.

Beck, Ulrich. 1993. *Die Erfindung des Politischen. Zu einer Theorie reflexiver Modernisierung*. Suhrkamp.

Bennahmias, Jean-Lu and Agnès Roche. 1992. *Des vertes de toutes les couleurs*. Albin Michel.

Bennet, David, Peter Glasner, and David Travis. 1986. *The Politics of Uncertainty: Regulating Recombinant DNA Research in Britain*. Routledge & Kegan Paul.

Bentley, Arthur F. 1908. *The Process of Government*. Harvard University Press, 1967.

Berg, Paul, et al. 1974. Du danger potentiel des manipulations génétiques. *Biochimie* 56: X–XII.

Berg, Paul, David Baltimore, Sydney Brenner, Richard O. Roblin III, and Maxine F. Singer. 1975. Summary Statement of the Asilomar Conference on Recombinant DNA Molecules. *Proceedings of the National Academy of Sciences* 72, no. 6: 1981–1984.

Bill, James A., and Robert L. Hardgrave Jr. 1973. *Comparative Politics: The Quest for Theory*. Charles E. Merrill.

Bimber, Bruce, and David H. Guston. 1995. Politics by the Same Means: Government and Science in the United States. In *Handbook of Science and Technology Studies*, ed. S. Jasanoff et al. Sage.

- Binder, Norbert. 1980. Richtlinien für die Genforschung im Spannungsfeld zwischen Gefahrenschutz und Forschungsfreiheit. In *Genforschung im Widerstreit*, ed. W. Klingmueller. Wissenschaftliche Verlagsgesellschaft.
- Boje, David M., Robert P. Gephart Jr., and Tojo Joseph Thatchenkery, eds. 1996. *Postmodern Management and Organization Theory*. Sage.
- Boyer, Robert. 1991. The Eighties: The Search for Alternatives to Fordism. In *The Politics of Flexibility*, ed. B. Jessop et al. Edward Elgar.
- Brand, Werner, Detlef Büsser, and Dieter Rucht. 1986. *Aufbruch in eine andere Gesellschaft. Neue soziale Bewegungen in der Bundesrepublik*. Campus.
- Bressers, Hans, Laurence J. OToole Jr., and Jeremy Richardson. 1994. Networks as Models of Analysis: Water Policy in Comparative Perspective. *Environmental Politics* 3: 1–23.
- Brill, Winston J. 1985. Safety Concerns and Genetic Engineering in Agriculture. *Science* 227: 381–384.
- Bruer, Rüdiger. 1991. Ansätze für ein Gentechnikrecht in der Bundesrepublik Deutschland. In *6. Trier Kolloquium zum Umwelt- und Technikrecht vom 26. bis 28. September 1990, Gentechnik und Umweltrecht*. Werner.
- Buchholz, Klaus. 1979. Die gezielte Förderung und Entwicklung der Biotechnologie. In *Geplante Forschung*, ed. W. van der Daele et al. Suhrkamp.
- Bud, Robert. 1993. *The Uses of Life: A History of Biotechnology*. Cambridge University Press.
- Budge, Ian, and David McKay. 1993. Turning Britain Around? In *The Developing British Political System in the 1990s*, third edition, ed. I. Budge and D. McKay. Longman.
- Buechler, Steven M. 1993. Beyond Resource Mobilization? Emerging Trends in Social Movement Theory. *Sociological Quarterly* 34: 217–235.
- Burchell, Graham. 1993. Liberal Government and Techniques of the Self. *Economy and Society* 22: 267–282.
- Butler, Judith. 1993. *Bodies That Matter: On the Discursive Limits of "Sex."* Routledge.
- Callon, Michel. 1986. Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay. In *Power, Action and Belief*, ed. J. Law. Routledge & Kegan Paul.
- Callon, Michel, and Bruno Latour. 1981. Unscrewing the Big Leviathan: How Actors Macro-Structure Reality and How Sociologists Help Them to Do So. In *Advances in Social Theory and Methodology*, ed. K. Knorr-Cetina and A. Cicourel. Routledge & Kegan Paul.
- Camiller, Patrick. 1989. Beyond 1992: The Left and Europe. *New Left Review* 175: 5–17.

- Cammack, Paul. 1992. The New Institutionalism: Predatory Rule, Institutional Persistence, and Macro-Social Change. *Economy and Society* 21: 397–429.
- Campbell, David. 1992. *Writing Security: United States Foreign Policy and the Politics of Identity*. University of Minnesota Press.
- Campbell, John L. 1988. *Collapse of an Industry: Nuclear Power and the Contradictions of US Policy*. Cornell University Press.
- Canals, Jordi. 1993. *Competitive Strategies in European Banking*. Oxford University Press.
- Catenhusen, Wolf-Michael, and Hanna Neumeister, eds. 1987. *Chancen und Risiken der Gentechnologie. Dokumentation des Berichts an den Deutschen Bundestag*. Schweitzer.
- Celazier, Michelle. 1993. A New Leader for Europe. *Global Finance* 7: 52–59.
- Chafer, Tony. 1984. The Greens in France: an Emerging Social Movement? *Journal of Area Studies* 14: 36–43.
- Chataway, Joanna. 1991. Biotechnology and Business Blues. *AgBiotech News and Information* 3: 1003–1005.
- Chilcote, Ronald H. 1981. *Theories of Comparative Politics: The Search for a Paradigm*. Westview.
- Churchill, Robin, John Gibson, and Lynda M, Warren, eds. 1991. *Law, Policy and the Environment*. Blackwell.
- Clifton, Richard. 1990. The UK Regulatory Structures; Development and Current Concerns. In *The Impact of New and Impending Regulations on UK Biotechnology*, ed. D. Bennett and B. Kirsop. Cambridge Biomedical Consultants.
- Colwell, Robert Elliot Norse, David Pimentel, Frances Sharples, and Daniel Simberloff. 1985. Genetic Engineering in Agriculture. *Science* 29: 111–112.
- Connolly, William E. 1991. *Identity/Difference: Democratic Negotiations of Political Paradox*. Cornell University Press.
- Coombs, Rod, Paolo Saviotti, and Vivien Walsh. 1987. *Economics and Technological Change*. Rowman and Littlefield.
- Cooper, Robert. 1989. Modernism, Post Modernism and Organizational Analysis 3: The Contribution of Jacques Derrida. *Organizational Studies* 10: 479–502.
- Couto, Richard A. 1993. Narrative, Free Space, and Political Leadership in Social Movements. *Journal of Politics* 55: 57–79.
- Cox, Andrew. 1986. The State, Finance and Industry Relationship in Comparative Perspective. In *State, Finance and Industry*, ed. A. Cox. Wheatsheaf.

- Cox, Robert W. 1987. *Production, Power, and World Order: Social Forces in the Making of History*. Columbia University Press.
- Crozier, Michel. 1970. *La Société bloquée*. Seuil.
- Culler, Jonathan. 1988. *Framing the Sign*. Blackwell.
- Dachs, Herbert, Peter Gerlich, Herbert Gottweis, et al., eds. 1991. *Handbuch des politischen Systems Österreichs*. Manz.
- Dahl, Robert A. 1957. The Concept of Power. *Behavioural Science* 2: 201–205.
- Dahl, Robert A. 1961. *Who Governs? Democracy and Power in an American City*. Yale University Press.
- Dalton, Russel J., and Manfred Kuchler, eds. 1990. *Challenging the Political Order: New Social Movements in Western Democracies*. Polity Press.
- Daly, Glyn. 1991. The Discursive Construction of Economic Space: Logics of Organization and Disorganization. *Economy and Society* 20: 79–102.
- Daly, Glyn. 1994. Post-metaphysical Culture and Politics: Richard Rorty and Laclau and Mouffe. *Economy and Society* 23: 173–200.
- Davis, Bernard D. 1987. Bacterial Domestication: Underlying Assumptions. *Science* 235: 1329–1335.
- de Chadarevian, Soraya. 1994. Building Molecular Biology in Post War Britain. Paper given at Fourth Mellon Workshop, “Institutional and Disciplinary Contexts of the Life Sciences in the Late Twentieth Century.” Massachusetts Institute of Technology.
- de Meyer, Arnoud, and Atsuo Mizushima. 1992. Global R&D Management. *R&D Management* 19: 135–146.
- de Rosnay, Joel. 1979. *Biotechnologies et Bio-Industrie*. Seuil/La Documentation Française.
- Derrida, Jacques. 1983. *Grammatologie*. Suhrkamp.
- Deutsch, Erwin. 1986. Zur Arbeit der Enquete-Kommissionscholz “Chancen und Risiken der Gentechnologie. In *Rechtsfragen der Gentechnologie*, ed. R. Lukes and R. Scholz. Carl Heymanns.
- de Woot, Philippe. 1990. *High Technology Europe: Strategic Issues for Global Competitiveness*. Blackwell.
- Dickson, David. 1989. Genome Project gets Rough Ride in Europe. *Science* 243: 399.
- Digester, Peter. 1992. The Fourth Face of Power. *Journal of Politics* 54: 977–1007.
- DiMaggio, Paul J., and Walter W. Powell. 1991. Introduction. In *The New Institutionalism in Organizational Analysis*, ed. P. DiMaggio and W. Powell. University of Chicago Press.

- Dobbin, Frank. 1994. *Forging Industrial Policy: The United States, Britain, and France in the Railway Age*. Cambridge University Press.
- Dodgson, Mark. 1991. Strategic Alignment and Organizational Options in Biotechnology Firms. *Technology Analysis and Strategic Management* 3: 115–125.
- Dowding, Keith. 1995. Model or Metaphor? A Critical Review of the Policy Network Approach. *Political Studies* 43: 136–158.
- Drake, Charles D., and Frank B. Wright. 1983. *Law of Health and Safety at Work: The New Approach*. Sweet & Maxwell.
- Dreyfus, Hubert L., and Paul Rabinow. 1983. *Michel Foucault: Beyond Structuralism and Hermeneutics*. University of Chicago Press.
- Duclos, Denis H., and Jocelyne J. Smadja. 1985. Culture and Environment in France. *Environmental Management* 9: 135–140.
- Duster, Troy. 1990. *Backdoor to Eugenics*. Routledge.
- Elizalde, Jose. 1987. Legal Aspects of Community Policy on Research and Technological Development (RTD). *Common Market Law Review* 30: 309–345.
- Ellington, Stephen. 1995. Understanding the Dialectic of Discourse and Collective Action: Public Debate and Rioting in Antebellum Cincinnati. *American Journal of Sociology* 101: 100–144.
- Elzinga, Aant, and Andrew Jamison. 1995. Changing Policy Agendas in Science and Technology. In *Handbook of Science and Technology Studies*, ed. S. Jasanoff et al. Sage.
- Esser, Josef, Wolfgang Fach, and Kenneth Dyson. 1983. “Social Market” and Modernization Policy: West Germany. In *Industrial Crisis*, ed. K. Dyson and S. Wilks. Blackwell.
- Evans, Peter, Dieter Rueschemeyer, and Theda Skocpol, eds. 1985. *Bringing the State Back In*. Cambridge University Press.
- Evans, Steve, Keith Ewing, and Peter Nolan. 1992. Industrial Relations and the British Economy in the 1990s: Mrs. Thatcher’s Legacy. *Journal of Management Studies* 29: 571–589.
- Fenno, Richard. 1978. *Home Style: House Members in Their Districts*. Little, Brown.
- Ferguson, James. 1994. *The Anti-Politics Machine: “Development,” Depoliticization, and Bureaucratic Power in Lesotho*. University of Minnesota Press.
- Ferguson, Thomas. 1989. Industrial Conflict and the Coming of the New Deal: The Triumph of Multinational Liberalism in America. In *The Rise and Fall of the New Deal Order, 1930–1980*, ed. S. Fraser and G. Gerstle. Princeton University Press.

- Fischer, Frank. 1995. *Evaluating Public Policy*. Nelson-Hall.
- Fischer, Frank. 1996. But Is It Scientific? Local Knowledge in Postpositivist Perspective. Manuscript, New York.
- Fischer, Frank, and Jon Forester, eds. 1993. *The Argumentative Turn in Policy Analysis and Planning*. Duke University Press.
- Fisher, Donald. 1990. Boundary Work and Science: The Relation Between Power and Knowledge. In *Theories of Science and Society*, ed. S. Cozzens and T. Gieryn. Indiana University Press.
- Fleck, Roland. 1990. *Technologieförderung. Schwachstellen, europäische Perspektiven und neue Ansätze*. Deutscher Universitätsverlag.
- Foucault, Michel. 1967. *Madness and Civilisation*. Tavistock.
- Foucault, Michel. 1972. *The Archaeology of Knowledge and the Discourse on Language*. Pantheon.
- Foucault, Michel. 1980. *The History of Sexuality*, volume I: *An Introduction*. Vintage.
- Foucault, Michel. 1984. Nietzsche, Genealogy, History. In *The Foucault Reader*, ed. P. Rabinow. Penguin.
- Frank, Manfred. 1989. *What Is Neostructuralism?* University of Minnesota Press.
- Frankland, E. Gene, and Donald Schoonmaker. 1992. *Between Protest and Power: The Green Party in Germany*. Westview.
- Game, Ann. 1991. *Undoing the Social: Towards a Deconstructive Sociology*. Toronto University Press.
- Gardener, Edward P. M., and Philip Molyneux. 1990. *Changes in West European Banking*. Unwin Hyman.
- Gaudillière, Jean-Paul. 1991. Biologie moléculaire et biologistes dans les années soixante: La naissance d'une discipline. Le cas français, Thèse, Université de Paris.
- George, Jim. 1994. *Discourses of Global Politics: A Critical (Re)Introduction to International Relations*. Lynne Rienner.
- George, Jim, and David Campbell. 1990. Patterns of Dissent and the Celebration of Difference: Critical Social Theory and International Relations. *International Studies Quarterly* 34: 269–293.
- Gerschenkron, Alexander. 1962. *Economic Backwardness in Historical Perspective*. Harvard University Press.
- Gieryn, Thomas F. 1983. Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Interests of Scientists. *American Sociological Review* 48: 781–795.

- Gieryn, Thomas F. 1995. "Boundaries of Science." In *Handbook of Science and Technology Studies*, ed. S. Jasanoff et al. Sage.
- Gill, Bernhard. 1991. *Gentechnik ohne Politik. Wie die Brisanz der Synthetischen Biologie von wissenschaftlichen Institutionen, Ethik- und anderen Kommissionen systematisch verdrängt wird.* Campus.
- Gill, Stephen. 1991. Reflections on Global Order and Sociohistorical Time. *Alternatives* 16: 275–314.
- Gilpin, R. 1968. *France in the Age of the Scientific State.* Princeton University Press.
- Glaser, Vicki. 1992. Strong Growth in Biotechnology Market Sectors Predicted for 1992–2002. *Genetic Engineering News*, March 12.
- Glémas, Patrick. 1989. BST. Une Hormone tres politique. *Agriculture Magazine*, February: 45–50.
- Goffman, Erving. 1974. *Frame Analysis.* Harper.
- Goldstein, Judith, and Robert O. Keohane, eds. 1993a. *Ideas and Foreign Policy: Beliefs, Institutions, and Political Change.* Cornell University Press.
- Goldstein, Judith, and Robert O. Keohane. 1993b. Ideas and Foreign Policy: An Analytical Framework. In *Ideas and Foreign Policy*, ed. J. Goldstein and R. Keohane. Cornell University Press.
- Gooding, Robert E., and Hans-Dieter Klingemann. 1996. Political Science: The Discipline. In *A New Handbook of Political Science*, ed. R. Gooding and H.-D. Klingemann. Oxford University Press.
- Gordon, Colin. 1991. Government Rationality: An Introduction. In *The Foucault Effect*, ed. G. Burchell et al. University of Chicago Press.
- Gottschling, Claudia. 1995. Forscher lernen feilschen. *Focus*, May 29.
- Gottweis, Herbert. 1988. *Die Welt der Gesetzgebung: Rechtsalltag in Österreich.* Böhlau.
- Graf, William D. 1992. Internationalization and Exoneration: Social Functions of the Transnationalizing West German Political Economy in the Post-War Era. In *The Internationalization of the German Political Economy*, ed. W. Graf. St. Martin's.
- Grafstein, Robert. 1992. *Institutional Realism: Social and Political Constraints on Rational Actors.* Yale University Press.
- Grant, Wyn. 1989. *Government and Industry: A Comparative Analysis of the US, Canada and the UK.* Edward Elgar.
- Grant, Wyn. 1993. Pressure Groups and the European Community. An Overview. In *Lobbying in the European Community*, ed. S. Mazey and J. Richardson. Oxford University Press.

- Grant, Wyn, William Paterson, and Colin Whitston. 1988. *Government and the Chemical Industry: A Comparative Study of Britain and West Germany*. Clarendon.
- Greenwood, J., and K. Ronit. 1991. Organized Interests and the European Internal Market. *Environment and Planning C* 9: 467–484.
- Groet, Suzanne S. 1991. Biotechnology and the US Government: The Pot at the End of the Rainbow? In *The Business of Biotechnology*, ed. R. Ono. Butterworth-Heinemann.
- Gros, François François Jacob, and Pierre Royer. 1979. *Sciences de la Vie et Société. Rapport au Président de la République* (Paris: La Documentation Française).
- Gummet, Philip. 1991. History, Development and Organisation of UK Science and Technology up to 1982. In *Science and Technology in the United Kingdom*, ed. R. Nicholson et al. Longman.
- Gunnell, John G. 1975. *Philosophy, Science, and Political Inquiry*. General Learning Press.
- Gunnell, John G. 1983. Political Theory: The Evolution of a Sub-Field. In *Political Science*, ed. A. Finifter. American Political Science Association.
- Haas, Peter M. 1992. Introduction: Epistemic Communities and International Policy Coordination. *International Organization* 46: 1–36.
- Hacking, Ian. 1984. *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science*. Cambridge University Press.
- Hagerdorn, Charles. 1989. Potential and Risk in Commercial Use of Microorganisms. *Forum for Applied Research and Public Policy* 4: 84–91.
- Haila, Yrjö, and Lassi Heininen. 1995. Ecology. A New Discipline for Disciplining? *Social Text* 13: 153–171.
- Hainsworth, Paul. 1990. Breaking the Mould: The Greens in the French Party System. In *French Political Parties in Transition*, ed. A. Cole. Dartmouth.
- Hajer, Maarten A. 1994. Managing the Metaphors: Global Environmental Constructs and the Missing Public Domain. Paper prepared for workshop on Science Studies, International Relations and the Global Environment, Cornell University.
- Hajer, Maarten A. 1995. *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*. Clarendon.
- Hall, Peter A. 1986. *Governing the Economy: The Politics of State Intervention in Britain and France*. Oxford University Press.
- Hall, Peter A., ed. 1989. *The Political Power of Economic Ideas: Keynesianism across Nations*. Princeton University Press.

- Hall, Peter A., and Rosemary C. R. Taylor. 1994. Political Science and the Four New Institutionalisms. Paper given at annual meeting of the American Political Science Association, New York.
- Hall, Stuart. 1989. The Toad in the Garden. Thatcherism among the Theorists. In *Marxism and the Interpretation of Culture*, ed. C. Nelson and L. Grossberg. Macmillan.
- Halpern, Nina P. 1993. Creating Socialist Economies: Stalinist Political Economy and the Impact of Ideas. In *Ideas and Foreign Policy*, ed. J. Goldstein and R. Keohane. Cornell University Press.
- Hampel, Frank. 1991. Politikberatung in der Bundesrepublik: Überlegungen am Beispiel von Enquete-Kommissionen. *Zeitschrift für Parlamentsfragen* 22: 110–133.
- Harvey, David. 1989. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Blackwell.
- Hassard, John, and Martin Parker. 1993. *Postmodernism and Organizations*. Sage.
- Henriques, Julian, Wendy Holway, Cathy Urwin, Couze Venn, and Valerie Walkerdine. 1984. *Changing the Subject: Psychology, Social Regulation and Subjectivity*. Methuen.
- Hértier, Adrienne. 1993. Einleitung. Policy-Analyse. Elemente der Kritik und Perspektiven der Neuorientierung. In *Policy-Analyse*, ed. A. Hértier. Westdeutscher Verlag.
- Hértier, Adrienne, Susanne Mingers, Chrisoph Knill, and Martina Becka. 1994. *Die Veränderung von Staatlichkeit in Europa*. Leske + Budrich.
- Herman, Ros. 1986. *The European Scientific Community*. Longman.
- Hill, Julie, and Green Alliance. 1990. Influences on Specific Sectors: Environment. In *The Impact of New and Impending Regulations on UK Biotechnology*, ed. D. Bennett and B. Kirsop. Cambridge Biomedical Consultants.
- Hirsch, Joachim. 1970. *Wissenschaftlich-technischer Fortschritt und politisches System. Organisation und Grundlagen administrativer Wissenschaftsförderung in der BRD*. Suhrkamp.
- Hoffmann, Stanley. 1991. The Institutions of the Fifth Republic. In *Searching for the New France*, ed. J. Hollifield and G. Ross. Routledge.
- Hollingworth, Rogers, Philippe Schmitter, and Wolfgang Streeck, eds. 1994. *Governing Capitalist Economies: Performance and Control of Economic Sectors*. Oxford University Press.
- Holmes, Peter. 1993. Towards a Common Industrial Policy in the EC? *European Business Journal* 5: 25–35.

- Horn, Ernst-Jürgen. 1987. Germany: A Market-Led Process. In *Managing Industrial Change in Western Europe*, ed. F. Duchêne and G. Sheperd. Frances Pinter.
- Huber, Joseph. 1985. *Die Regenbogengesellschaft: Ökologie und Sozialpolitik*. Fischer.
- Hucke, Jochen. 1990. Umweltpolitik: Die Entwicklung eines neuen Politikfelds. In *Politik in der Bundesrepublik Deutschland*, ed. K. von Beyme and M. Schmid. Westdeutscher Verlag.
- Hunt, Alan. 1992. Foucault's Expulsion of Law: Toward a Retrieval. *Law and Social Inquiry* 17: 1–38.
- Immergut, Ellen M. 1992. *Health Politics: Interests and Institutions in Western Europe*. Cambridge University Press.
- Irvine, Julia. 1990. Risk-Averse Lenders in a High-Risk Area. *Accountancy* 106,134–135.
- Jacob, François. 1988. *The Statue Within: An Autobiography*. Basic Books.
- Jacobs, Francis, Richard Corbett, and Michael Shackleton. 1992. *The European Parliament*. Longman.
- Japp, Klaus P. 1986. Neue soziale Bewegungen und die Kontinuität der Moderne. *Soziale Welt* Sonderband 4: 311–333.
- Jasanoff, Sheila. 1985. Technological Innovation in a Corporatist State: The Case of Biotechnology in the Federal Republic of Germany. In: *Research Policy* 14: 23–38.
- Jasanoff, Sheila. 1990. *The Fifth Branch: Science Advisors as Policymakers*. Harvard University Press.
- Jasanoff, Sheila, Gerald Markle, Trevor Pinch and James Petersen, eds. 1995. *Handbook of Science and Technology Studies*. Sage.
- Jessop, Bob. 1988. Conservative Regimes and the Transition to Post-Fordism: The Case of Britain and West Germany. Papers in Politics and Government no. 47, University of Essex.
- Jessop, Bob. 1990. *State Theory: Putting Capitalist States in Their Place*. Pennsylvania State University Press.
- Jessop, Bob. 1991. Thatcherism and Flexibility: The White Heat of a Post-Fordist Revolution. In *The Politics of Flexibility*, ed. B. Jessop et al. Edward Elgar.
- Jessop, Bob. 1992. From Social Democracy to Thatcherism: Twenty-Five Years of British Politics. In *Social Change in Contemporary Britain*, ed. N. Abercrombie and A. Warde. Polity Press.

- Jobert, Bruno, and Pierre Muller. 1987. *L'Etat en Action. Politiques Publiques et Corporatismes*. Presses Universitaires de France.
- Jordan, Grant. 1990. Policy Realism versus "New" Institutional Ambiguity. *Political Studies* 38: 470–484.
- Jordan, Grant, and Jeremy Richardson. 1982. The British Policy Style or the Logic of Negotiation? In *Policy Styles in Western Europe*, ed. J. Richardson. Allen & Unwin.
- Jordan, Grant, and Klaus Schubert. 1992. A Preliminary Ordering of Policy Network Labels. *European Journal of Political Research* 21: 7–27.
- Katzenstein, Peter. 1987. *Policy and Politics in West Germany: The Growth of the Semisovereign State*. Temple University Press.
- Kay, Lily E. 1993. *The Molecular Vision of Life: Caltech, the Rockefeller Foundation, and the Rise of the New Biology*. Oxford University Press.
- Kay, Lily E. 1995. Who Wrote the Book of Life? Manuscript, Boston.
- Keller, Evelyn Fox. 1992. Nature, Nurture, and the Human Genome Project. In *The Code of Codes*, ed. D. Kevles and L. Hood. Harvard University Press.
- Kellner, Douglas. 1989. *Jean Baudrillard: From Marxism to Postmodernism and Beyond*. Stanford University Press.
- Kenward, Michael. 1992. Little Ventured, Nothing Gained. *Director* 46: 35.
- Kevles, Daniel J. 1985. *In the Name of Eugenics: Genetics and the Uses of Human Heredity*. Knopf.
- Kitschelt, Herbert. 1989. *The Logics of Party Formation: Ecological Politics in Belgium and West Germany*. Cornell University Press.
- Klingmüller, Walter, ed. 1980. *Genforschung im Widerstreit*. Wissenschaftliche Verlagsgesellschaft.
- Kloepfer, Michael. 1989. *Umweltrecht*. C. H. Beck.
- Kohler, Robert E. 1976. The Management of Science: The Experience of Warren Weaver and the Rockefeller Foundation Programme in Molecular Biology. *Minerva* 14: 249–293.
- Kollek, Regine. 1989. Neue Kriterien für die Abschätzung des Risikos. In *Gentechnik—Wer kontrolliert die Industrie?* ed. M. Thureau. Fischer.
- Krämer, Ludwig. 1990. *EEC Treaty and Environmental Protection*. Sweet & Maxwell.
- Krimsky, Sheldon. 1982. *Genetic Alchemy: The Social History of the Recombinant DNA Controversy*. MIT Press.
- Kuisel, Richard F. 1981. *Capitalism and the State in Modern France: Renovation and Economic Management in Twentieth Century*. Cambridge University Press.

- Kusch, Martin. 1991. *Foucault's Strata and Fields: An Investigation into Archeological and Genealogical Science Studies*. Kluwer.
- Laclau, Ernesto. 1990. *New Reflections on the Revolution of Our Time*. Verso.
- Laclau, Ernesto, and Chantal Mouffe. 1985. *Hegemony and Socialist Strategy: Toward a Radical Democratic Politics*. Verso.
- Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers Through Society*. Harvard University Press.
- Latour, Bruno. 1990. Drawing Things Together. In *Representation in Scientific Practice*, ed. M. Lynch and S. Woolgar. MIT Press.
- Latour, Bruno. 1993. *We Have Never Been Modern*. Harvard University Press.
- Leborgne, D., and A. Lipietz. 1988. New Technologies, New Modes of Regulation: Some Spatial Implications. *Environment and Planning D* 8: 263–280.
- Lefebvre, Henri. 1991. *The Production of Space*. Blackwell.
- Leggewie, Claus, 1985. Propheten ohne Macht: Die neuen sozialen Bewegungen in Frankreich zwischen Resignation und Fremdbestimmung. In *Neue soziale Bewegungen in Westeuropa und den USA*, ed. K.-W. Brand. Campus.
- Lenoir, Timothy. 1992. The Discipline of Nature and the Nature of Discipline. Manuscript, Stanford University.
- Lenoir, Timothy. 1994. Was the Last Turn the Right Turn? The Semiotic Turn and A. J. Greimas. *Configurations* 1: 119–136.
- Levidow, Les, and Joyce Tait. 1992. Release of Genetically Modified Organisms: Precautionary Legislation. *Project Appraisal* 7: 93–105.
- Levin, Morris, and Harlee S. Strauss. 1991. *Risk Assessment in Genetic Engineering*. McGraw-Hill.
- Lewin, Benjamin. 1990. *Genes IV*. Oxford University Press.
- Lex, Maurice. 1990. The UK Science Base. In *The UK Biotechnology Handbook '90*, ed. A. Crafts-Lighty et al. Bioindustry Association.
- Linstead, Stephen, and Robert Grafton-Small. 1992. On Reading Organizational Culture. *Organization Studies* 13: 331–355.
- Linstead, Steve. 1993. Deconstruction in the Study of Organizations. In *Post-modernism and Organization*, ed. J. Hassard and M. Parker. Sage.
- Lipietz, Alain. 1991. Governing the Economy in the Face of International Challenge: From National Developmentalism to National Crisis. In *Searching for the New France*, ed. J. Hollifield and G. Ross. Routledge.
- Ludmerer, Kenneth L. 1972. *Eugenics and American Society: A Historical Survey*. Johns Hopkins University Press.

- Lukes, Steven. 1974. *Power: A Radical View*. Macmillan.
- Lukes, Rudolf, and Rupert Scholz, eds. 1986. *Rechtsfragen der Gentechnologie*. Carl Heymanns.
- Lyotard, Jean-François. 1984. *The Post-Modern Condition: A Report on Knowledge*. Manchester University Press.
- Malunat, Bernd M. 1994. Die Umweltpolitik der Bundesrepublik Deutschland. *Aus Politik und Zeitgeschichte. Beilage zur Wochenzeitung Das Parlament* B 49/94: 3–12.
- Martin, Wallace. 1986. *Recent Theories of Narrative*. Cornell University Press.
- Mayntz, Renate. 1994. Policy-Netzwerke und die Logik von Verhandlungssystemen. In *Policy-Analyse*, ed. A. Hértier. Westdeutscher Verlag.
- Mazey, Sonia. 1986. Public Policy-Making in France: The Art of the Possible. *West European Politics* 9: 412–428.
- McArthur, R. 1990. Replacing the Concept of High Technology: Towards a Diffusion-Based Approach. *Environment and Planning A* 22: 811–828.
- McCormick, John. 1991. *British Politics and the Environment*. Earthscan.
- McKay, David. 1993. Economic Difficulties and Government Response 1931–1993. In *Developing British Political System: the 1990s*, ed. I. Budge and D. McKay. Longman.
- Melucci, Alberto. 1985. The Symbolic Challenge of Contemporary Movements. *Social Research* 52: 789–816.
- Melucci, Alberto. 1988. Social Movements and the Democratization of Everyday Life. In *Civil Society and the State*, ed. J. Keane. Verso, 1988.
- Messerlin, Patrick. 1987. France: The Ambitious State. In *Managing Industrial Change in Western Europe*, ed. F. Duchêne and G. Sheperd. Pinter.
- Metha, Judith. 1993. Meaning in the Context of Bargaining Games: Narratives in Opposition. In *Economics and Language*, ed. W. Henderson et al. Routledge.
- Middlemas, Keith. 1991. *Power, Competition and the State*, volume 3: *The End of the Postwar Era: Britain since 1974*. Macmillan.
- Morgan, Joan, and W. J. Whelan. 1979. *Recombinant DNA and Genetic Experimentation*. Pergamon.
- Morris, Aldon B., and Carol McClurg Mueller, eds. 1992. *Frontiers in Social Movement Theory*. Yale University Press.
- Murray, Gordon C. 1992. A Challenging Marketplace for Venture Capital. *Long Range Planning* 25, no. 6: 79–86.
- Narjes, Karl Heinz. 1988. Europe's Technological Challenge: a View from the European Commission. *Science and Public Policy* 15: 395–402.

- Nelkin, Dorothy, and Susan Lindee. 1996. *The DNA Mystique: The Gene as Cultural Icon*. Freeman.
- Newmark, Peter. 1989. One of the Better Models of European Cooperation. *Nature* 338: 724.
- Nicolaides, Phedon. 1993. Industrial Policy: The Problem of Reconciling Definitions, Intentions and Effects. In *Industrial Policy in the European Community*, ed. P. Nicolaides. Martinus Nijhoff.
- Nielsen, Klaus. 1991. Towards a Flexible Future—Theories and Politics. In *The Politics of Flexibility*, ed. B. Jessop et al. Edward Elgar.
- Nordlinger, Eric. 1981. *On the Autonomy of the Democratic State*. Harvard University Press.
- Oakey, Ray, Wendy Faulkner, Sarah Cooper, and Vivien Walsh. 1990. *New Firms in the Biotechnology Industry: Their Contribution to Innovation and Growth*. Pinter.
- OECD. 1989. *Biotechnology. Economic and Wider Impacts*. OECD.
- OECD, Alan T. Bull, Geoffrey Holt, and Malcolm D. Lilly. 1982. *Biotechnology. International Trends and Perspectives*. OECD.
- Offe, Claus. 1985. New Social Movements: Challenging the Boundaries of Institutional Politics. *Social Research* 52: 817–868.
- O'Neill, Patrick. 1994. *Fictions of Discourse: Reading Narrative Theory*. University of Toronto Press.
- Orsenigo, Luigi. 1989. *The Emergence of Biotechnology: Institutions and Markets in Industrial Innovation*. St. Martin's.
- Overbeck, Henk. 1990. *Global Capitalism and National Decline: The Thatcher Decade in Perspective*. Unwin Hyman.
- Patzelt, Werner J. 1993. *Abgeordnete und Repräsentation: Amtsverständnis und Wahlkreisarbeit*. Richard Rothe.
- Patzelt, Werner J. 1987a. *Grundlagen der Ethnomethodologie. Theorie, Empirie und politikwissenschaftlicher Nutzen einer Soziologie des Alltags*. Wilhelm Fink.
- Patzelt, Werner J. 1987b. *Theorie, Empirie und politikwissenschaftlicher Nutzen einer Soziologie des Alltags*. Wilhelm Fink.
- Pauly, Philip J. 1993. Essay Review: The Eugenics Industry—Growth or Restructuring? *Journal of the History of Biology* 26: 131–145.
- Peterson, John. 1991. Technology Policy in Europe: Explaining the Framework Programme and Eureka in Theory and Practice. *Journal of Common Market Studies* 29: 271–290.
- Pinch, Trevor J., and Wiebe E. Bijker. 1987. The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technol-

- ogy Might Benefit Each Other. In *The Social Construction of Technological Systems*, ed. W. Bijker et al. MIT Press.
- Pisano, Gary P. 1991. The Governance of Innovation: Vertical Integration and Collaborative Arrangements in the Biotechnology Industry. *Research Policy* 20: 237–249.
- Pogunkte, Thomas. 1993. *Alternative Politics: The German Green Party*. Edinburgh University Press.
- Pohlmann, Andreas. 1990. *Neuere Entwicklungen im Gentechnikrecht: Rechtliche Grundlagen und aktuelle Gesetzgebung für gentechnische Industrievorhaben*. Duncker & Humboldt.
- Prendville, Brendan. 1994. *Environmental Politics in France*. Westview.
- Prier, Michel. 1984. *Droit de l'environnement*. Dalloz.
- Proctor, Robert N. 1992. Genomics and Eugenics: How Fair is the Comparison? In *Gene Mapping*, ed. G. Annas and S. Elias. Oxford University Press.
- Pronier, Raymond, and Vincent Jacques le Seigneur. 1992. *Génération verte. Les écologistes en politique*. Presses de la Renaissance.
- Raschke, Joachim. 1991. *Krise der Grünen Bilanz und Neubeginn*. Schüren.
- Raugel, Pierre-Jean. 1990. Création des sociétés indépendant spécialisées en biotechnologies et en biologie en France. *Biofutur*, March: 95–104.
- Raugel, Pierre-Jean. 1992. An Impressionist View of the French Biotechnology Industry. *BFE* 9: 206–211.
- Reed, Michael, and Michael Hughes. 1992. *Rethinking Organization: New Directions in Organization Theory and Analysis*. Sage.
- Regal, P. J. 1994. Scientific Principles for Ecologically Based Risk Assessment of Transgenic Organisms. *Molecular Ecology* 3: 5–13.
- Reich, Simon. 1990. *The Fruits of Fascism: Postwar Prosperity in Historical Perspective*. Cornell University Press.
- Rheinberger, Hans-Jörg. 1992. Experiment, Difference, and Writing, Part I and Tracing Protein Synthesis, Part II: The Laboratory Life of Transfer RNA. *Studies in History and Philosophy of Science* 23: 305–331 and 389–422.
- Rheinberger, Hans-Jörg. 1993. Genetic Engineering and the Practice of Molecular Biology. Paper given at the Mellon Workshop on Genetic Engineering: Transformation in Science, Politics and Culture, Massachusetts Institute of Technology.
- Rheinberger, Hans-Jörg. 1994. Representations: Essay Review. *Studies in History and Philosophy of Science* 25: 647–654.
- Rheinberger, Hans-Jörg. 1995. Kurze Geschichte der Molekularbiologie. Preprint 24, Max-Planck-Institut für Wissenschaftsgeschichte, Berlin.

- Rhodes, R. A. W. 1988. *Beyond Westminster and Whitehall*. Unwin Hyman.
- Riessman, Catherine Kohler. 1993. *Narrative Analysis*. Sage.
- Riker, William H., and Peter C. Ordeshook. 1973. *An Introduction to Positive Political Theory*. Prentice-Hall.
- Robinson, Mike. 1992. *Greening of British Party Politics*. Manchester University Press.
- Robson, Keith. 1993. Governing Science and Economic Growth at a Distance: Accounting Representation and the Management of Research and Development. *Economy and Society* 22: 461–481.
- Ronayne, Jarlath. 1984. *Science in Government*. Arnold.
- Ronge, Volker. 1986. Zur politischen Steuerbarkeit des technologischen Wandels. In *Forschungs- und Technologiepolitik in der Bundesrepublik Deutschland*, ed. W. Bruder. Westdeutscher Verlag.
- Rorty, Richard. 1989. *Contingency, Irony, and Solidarity*. Cambridge University Press.
- Rose, Nikolas. 1994. Expertise and the Government of Conduct. *Studies in Law, Politics and Society* 14 (1994), 359–397.
- Rose, Nikolas. 1996. Governing “Advanced” Liberal Democracies. In *Foucault and Political Reason*, ed. A. Barry et al. University of Chicago Press.
- Rose, Nikolas, and Peter Miller. 1992. Political Power Beyond the State: Problematics of Government. *British Journal of Sociology* 43: 172–205.
- Rosenau, Pauline Marie. 1992. *Post-Modernism and the Social Sciences: Insights, Inroads, and Intrusions*. Princeton University Press.
- Roth, Roland. 1985. Neue soziale Bewegungen in der politischen Kultur der Bundesrepublik—eine vorläufige Skizze. In *Neue soziale Bewegungen in Westeuropa und den USA*, ed. K.-W. Brand. Campus.
- Roth, Roland. 1991. Abkehr vom Etatismus. In *Die Bundesrepublik in den achtziger Jahren*, ed. W. Süß. Leske+Budrich.
- Roth, Roland, and Dieter Rucht. 1987. *Neue soziale Bewegungen in der Bundesrepublik Deutschland*. Campus.
- Rothwell, Roy, and Mark Dodgson. 1992. European Technology Policy Evolution: Convergence Towards SMEs and Regional Technology Transfer. *Technovation* 12: 223–238.
- Rouban, Luc. 1988. *L'etat et la science. la politique publique de la science et de la technologie*. Editions du CNRS.
- Ryder, Maarten. 1994. Key Issues in the Deliberate Release of Genetically Manipulated Bacteria. *FEMS Microbiology Ecology* 15: 139–146.

- Saalfeld, Thomas. 1990. The West German Bundestag after 40 Years: The Role of Parliament in a "Party Democracy." *West European Politics* 13: 68–89.
- Salomon, Jean-Jacques. 1991. La Capacité d'Innovation. In *Entre "Etat et le Marché,"* ed. M. Lévy-Leboyer and J.-C. Casanove. Gallimard.
- Salter, Brian and Ted Tapper. 1993. The Application of Science and Scientific Autonomy in Great Britain: A Case Study of the Science and Engineering Research Council. *Minerva* 31: 38–55.
- Sandholtz, Wayne. 1992. *High-Tech Europe: The Politics of International Cooperation*. University of California Press.
- Sarkar, Saral. 1993, 1994. *Green-Alternative Politics in West Germany* (two volumes). United Nations University Press.
- Scharpf, Fritz W., and Volker Hauff. 1975. *Modernisierung der Volkswirtschaft*. Europäische Verlagsanstalt.
- Scholz, Rudolf. 1986. Die Gentechnologie aus der Sicht des Rechts der Technik. *Deutsches Verwaltungsblatt* 37: 1221–1230.
- Senker, Jacqueline. 1991. UK Biotechnology. Technology Transfer Involving Small and Medium-sized Firms. *Industry and Higher Education*, June: 108–113.
- Senker, Jacqueline, and Margret Sharp. 1988. The Biotechnology Directorate of the SERC. Report and Evaluation of its Achievements 1981–1987. Report submitted to the Management Committee of the Biotechnology Directorate, Science Policy Unit, Sussex.
- Shackley, Simon and Margaret Sharp. 1989. Environmental Release: Don't Trust the DoE. *International Industrial Biotechnology* 9: 26–28.
- Shapiro, J., L. MacHattie, L. Eron, G. Ihler, K. Ippen, and J. Beckwith. 1969. The isolation of pure lac operon DNA. *Nature* 224: 768–774.
- Sharp, Margret. 1989. European Technology—Does 1992 Matter? Papers in Science, Technology and Public Policy No. 19, Science Policy Research Unit, University of Essex.
- Sharp, Margret. 1991a. Pharmaceuticals and Biotechnology: Perspectives for the European Industry. In *Technology and the Future of Europe*, ed. C. Freeman et al. Pinter.
- Sharp, Margret. 1991b. The Single Market and European Technology Policies. In *Technology and the Future of Europe*, ed. C. Freeman et al. Pinter.
- Sharples, Frances E. 1987. Regulation of Products from Biotechnology. *Science* 235: 1329–1332.
- Shattock, Michael L. 1991. Higher Education and the Research Councils. In *Science and Technology in the United Kingdom*, ed. R. Nicholson et al. Longman.

- Sheperd, Geoffrey. 1987. United Kingdom: A Resistance to Change. In *Managing Industrial Change in Western Europe*, ed. F. Duchéne and G. Sheperd. Pinter.
- Shepsle, Kenneth A. 1989. Studying Institutions: Some Lessons from the Rational Choice Approach. *Journal of Theoretical Politics* 1: 131–147.
- Shepsle, Kenneth A., and Barry R. Weingast. 1994. Positive Theories of Congressional Institutions. *Legislative Studies Quarterly* 19: 149–179.
- Simonis, Udo E. 1995. Ecological Modernization of Industrial Society: Three Strategic Elements. *International Social Science Journal* 41: 347–361.
- Simons, Jon. 1995. *Foucault and the Political*. Routledge.
- Smart, Barry. 1982. Foucault, Sociology, and the Problem of Human Agency. *Theory and Society* 11: 121–141.
- Smart, Barry. 1985. *Michel Foucault*. Ellis Horwood.
- Smart, Barry. 1992a. *Modern Conditions, Postmodern Controversies*. Routledge.
- Smart, Barry. 1992b. The Politics of Truth. In *Foucault: A Critical Reader*, ed. D. Couzens Hoy. Blackwell.
- Spaargaren, Gert, and Arthur P.J. Mol. 1992. Sociology, Environment, and Modernity: Ecological Modernization as a Theory of Social Change. *Society and Natural Resources* 5: 323–344.
- Star, Susan Leigh, and James R. Griesemer. 1989. Institutional Ecology, “Translations” and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907–39. *Social Studies of Science* 19: 387–420.
- Stent, Gunther S., and Richard Calendar. 1978. *Molecular Genetics: An Introductory Narrative*, second edition. Freeman.
- Streeck, Wolfgang, and Philippe C. Schmitter, eds. 1985. *Private Interest Government: Beyond Market and State*. Sage.
- Strohman, Richard C. 1993. Ancient Genomes, Wise Bodies, Unhealthy People: Limits of a Genetic Paradigm in Biology and Medicine. *Perspectives in Biology and Medicine* 37: 112–145.
- Süss, Werner. 1991. Zukunft durch Modernisierungspolitik. Das Leitthema der 80er Jahre. In *Die Bundesrepublik in den achtziger Jahren*, ed. W. Süss. Lesk und Budrich.
- Tait, Joyce, and Les Levidow. 1992. Proactive and Reactive Approaches to Risk Regulation. The Case of Biotechnology. *Futures* 24: 219–231.
- Tarabusi, Claudio Casadio. 1993. Globalisation in the Pharmaceutical Industry: Technological Change and Competition in a Triad Perspective. *STI Review*, December: 123–161.

- Tarrow, Sidney. 1988. National Politics and Collective Action: Recent Theory and Research in Western Europe and the United States. *Annual Review of Sociology* 14: 421–440.
- Tauber, Alfred I., and Sahota Sarkar. 1992. The Human Genome Project: Has Blind Reductionism gone Too Far? *Perspectives in Biology and Medicine* 35: 222–235.
- Teitelman, Robert. 1994. *Profits of Science: The American Marriage of Business and Technology*. Basic Books.
- Tesier, Robert. 1993. Ethique Environmentale et Théorie du Fait moral chez Durkheim. *Social Compass* 40: 437–449.
- Thelen, Kathleen, and Sven Steinmo. 1992. Historical Institutionalism in Comparative Perspective. In *Structuring Politics*, ed. S. Steinmo et al. Cambridge University Press.
- Thiebaut, Carlos. 1992. The Complexity of the Subject, Narrative Identity and the Modernity of the South. *Philosophy and Social Criticism* 18: 313–331.
- Thompson, Graham. 1990. *The Political Economy of the New Right*. Twayne.
- Tiedje, James M., Robert K. Colwell, Yaffa L. Grossman, Robert E. Hodson, Richard E. Lenski, Richard N. Mack, and Philip Regal. 1989. The Planned Introduction of Genetically Engineered Organisms: Ecological Considerations and Recommendations. *Ecology* 70: 298–315.
- Touraine, Alain. 1984. *Le retour de l'acteur*. Fayard.
- Touraine, Alain. 1992. Is Sociology Still the Study of Society? In *Between Totalitarianism and Postmodernity*, ed. P. Beilharz et al. MIT Press.
- Truman, David B. 1951. *The Governmental Process*. Knopf.
- Tschannen, Olivier, and François Hainard. 1993. Sociologie et Environment: Tropismes Disciplinares ou Nouveau Paradigme? *Schweizerische Zeitschrift für Soziologie* 19: 421–443.
- Van der Meer, Robert R. 1986. EC-Biotechnology: A European Challenge. *TIBTECH*, November: 277–279.
- van Elsas, J. D., and J. T. Trevors. 1991. Environmental Risks and Fate of Genetically Engineered Microorganisms in Soil. *Journal of Environmental Science and Health* 26: 981–1001.
- Väth, Werner. 1984. Konservative Modernisierungspolitik—ein Widerspruch in sich? Zur Neuausrichtung der Forschungs- und Technologiepolitik der Bundesrepublik. *Prokla* 56: 83–103.
- Vig, Norman J. 1968. *Science and Technology in British Politics*. Pergamon.
- Vogel, David. 1986. *National Styles of Regulation: Environmental Policy in Great Britain and the United States*. Cornell University Press.

- von Alemann, Ulrich, Peter Jansen, Heiderose Kilper, and Leo Kissler. 1988. *Technologiepolitik: Grundlagen und Perspektiven in der Bundesrepublik Deutschland und in Frankreich*. Campus.
- von Thienen, Volker. 1986. Künftig ein technikgestaltendes Parlament? Zu den Empfehlungen der Enquete-Kommission "Technologiefolgenabschätzung." *Zeitschrift für Parlamentsfragen* 17: 548–557.
- Vowe, Gerhard. 1986. Wissen, Interesse und Macht. Zur Technikgestaltung durch Enquete-Kommissionen. *Zeitschrift für Parlamentsfragen* 17: 557–568.
- Wagner, Cynthia K. 1992. International R&D is the Rule. *Bio/Technology* 10 (1992): 529–531.
- Ward, Mike. 1993. Rhône-Poulenc: From Bioscience to Market. *Bio/Technology* 11: 799–801.
- Warmuth, Ekkehard. 1991. Biotechnologie-Förderung in den neuen Bundesländern, *BioEngineering* 7: 6.
- Warren, Mark E. 1996. What Should We Expect from More Democracy? Radically Democratic Responses to Politics. *Political Theory* 24: 241–270.
- Weale, Albert, Timothy O’Riordan, and Louise Krammer. 1991. *Controlling Pollution in the Round: Change and Choice in Environmental Regulation in Britain and West Germany*. Anglo-German Foundation.
- Weiner, Klaus-Peter. 1990. Between Political Regionalization and Economic Globalization. Problems and Prospects of European Integration. *International Journal of Political Economy* 19: 41–62.
- Weingart, Peter, Jürgen Kroll, and Kurt Bayertz. 1988. *Rasse, Blut und Gene: Geschichte der Eugenik und Rassenhygiene in Deutschland*. Suhrkamp.
- Wells, Susan. 1996. *Sweet Reason: Rhetoric and the Discourses of Modernity*. University of Chicago Press.
- Welsch, Wolfgang. 1996. *Vernunft. Die zeitgenössische Vernunftkritik und das Konzept der transversalen Vernunft*. Suhrkamp.
- Wheale, Peter, and Ruth McNally. 1990. UK Government Control of the Release of Genetically Engineered Organisms into the Environment. A Critical Evaluation. In *European Workshop on Law and Genetic Engineering*, ed. D. Leskien and J. Spangenberg. BBU.
- White, Hayden. 1981. The Value of Narrativity in the Representation of Reality. In *On Narrative*, ed. W. Mitchell. University of Chicago Press.
- Wilkie, Tom. 1991. *British Science since 1945*. Blackwell.
- Wilks, Steven, and Maurice Wright, eds. 1987. *Comparative Government-Industry Relations*. Clarendon.

Wilsford, David. 1988. Tactical Advantages versus Administrative Heterogeneity: The Strengths and the Limits of the French State. *Comparative Political Studies* 21: 126–168.

Wolstenholme, Gordon. 1963. *Man and His Future*. Ciba Foundation and Churchill.

Wright, Susan. 1994. *Molecular Politics: Developing American and British Regulatory Policy for Genetic Engineering, 1972–198*. University of Chicago Press.

Wurzel, Gabriele, and Ernst Merz. 1991. Gesetzliche Regelungen von Fragen der Gentechnik und Humangenetik, Gentechnikgesetz und Humangenetikgesetz. *Aus Politik und Zeitgeschichte. Beilage zur Wochenzeitung Das Parlament*, February 1: 12–24.

Yanow, Dvora. 1996. *How Does a Policy Mean? Interpreting Policy and Organizational Action*. Georgetown University Press.

Yoxen, Edward. 1978. *The Social Impact of Molecular Biology*, Ph.D. dissertation, Cambridge University.

Yoxen, Edward. 1981. Life as a Productive Force: Capitalising the Science and Technology of Molecular Biology. In *Studies in the Labour Process*, volume 1, ed. R. Young and L. Levidow. CSE Books.

Yoxen, Edward. 1982. Giving Life a New Meaning: The Rise of the Molecular Biology Establishment. In *Scientific Establishments and Hierarchies*, ed. N. Elias et al. Reidel.

Yoxen, Edward J. 1984. Assessing Progress with Biotechnology. In *Science and Technology Policy in the 1980s and Beyond*, ed. M. Gibbons et al. Longman.

Zysman, John. 1983. *Governments, Markets, and Growth: Financial Systems and the Politics of Industrial Change*. Cornell University Press.

Zarnitz, Marie Luise. 1968. *Molekulare und physikalische Biologie*. Vandenhoeck & Ruprecht.

Zeuner, Bodo. 1991. Die Partei der Grünen. Zwischen Bewegung und Staat. In *Die Bundesrepublik in den achtziger Jahren*, ed. W. Süß. Lesk und Budrich.