

Contents

Science in the Context of Application: Methodological Change, Conceptual Transformation, Cultural Reorientation	1
Martin Carrier and Alfred Nordmann	
Part I Changing Conditions of Scientific Research: Science and Technology	
Knowledge, Politics, and Commerce: Science Under the Pressure of Practice	11
Martin Carrier	
Between the Pure and Applied: The Search for the Elusive Middle Ground	31
Margaret Morrison	
Science in the Context of Industrial Application: The Case of the Philips Natuurkundig Laboratorium	47
Marc J. de Vries	
Multi-Level Complexities in Technological Development: Competing Strategies for Drug Discovery	67
Matthias Adam	
Theory and Therapy: On the Conceptual Structure of Models in Medical Research	85
Martin Carrier and Patrick Finzer	
Materials as Machines	101
Bernadette Bensaude-Vincent	
Part II Changing Conditions of Scientific Research: The Role of Instruments	
Holism and Entrenchment in Climate Model Validation	115
Johannes Lenhard and Eric Winsberg	
Computational Science and Its Effects	131
Paul Humphreys	

Expertise in Methods, Methods of Expertise	143
Carsten Reinhardt	
Recent Orientations and Reorientations in the Life Sciences	161
Hans-Jörg Rheinberger	
Transforming Objects into Data: How Minute Technicalities of Recording “Species Location” Entrench a Basic Challenge for Biodiversity	169
Ayelet Shavit and James Griesemer	
 Part III Changing Conditions of Scientific Research: Institutional Changes in Applied Research	
Protected Spaces of Science: Their Emergence and Further Evolution in a Changing World	197
Arie Rip	
The Cognitive, Instrumental and Institutional Origins of Nanoscale Research: The Place of Biology	221
Anne Marcovich and Terry Shinn	
 Part IV Science, Values and Society: Economic, Political and Public Relations of Research	
Bringing the Marketplace into Science: On the Neoliberal Defense of the Commercialization of Scientific Research	245
Justin Biddle	
Medical Market Failures and Their Remedy	271
James Robert Brown	
Thoughts on Politicization of Science Through Commercialization	283
M. Norton Wise	
Political Effectiveness in Science and Technology	301
Daniel Sarewitz	
The Political Economy of Technoscience	317
Astrid Schwarz and Alfred Nordmann	
Science, the Public and the Media – Views from Everywhere	337
Peter Weingart	
 Part V Science, Values and Society: Freedom of Research and Social Accountability	
Conditions of Science: The Three-Way Tension of Freedom, Accountability and Utility	351
Torsten Wilholt and Hans Glimell	

Integrating the Ethical into Scientific Rationality 371
 Janet A. Kourany

Part VI Science, Values and Society: Historical Transformations

What Makes Computer Science a Science? 389
 Michael S. Mahoney

**Black-Boxing Organisms, Exploiting the Unpredictable:
 Control Paradigms in Human–Machine Translations** 409
 Jutta Weber

**An Epoch-Making Change in the Development of Science?
 A Critique of the “Epochal-Break-Thesis”** 431
 Gregor Schiemann

**Everything New Is Old Again: What Place Should Applied
 Science Have in the History of Science?** 455
 Ann Johnson

Science in the Context of Technology 467
 Alfred Nordmann

Index 483