
THE EXPERIMENTAL SIDE OF MODELING

ISABELLE F. PESCHARD
AND BAS C. VAN FRAASSEN, EDITORS

FID SOCIETY
MINNEAPOLIS
IN ZUSAMMENHANG MIT DER
UNIVERSITY OF MINNESOTA

Minnesota Studies in the Philosophy of Science 21



University of Minnesota Press
Minneapolis
London

CONTENTS

Preface and Acknowledgments	vii
Introduction	
ISABELLE F. PESCHARD AND BAS C. VAN FRAASSEN	1
1. Models of Experiments	
RONALD N. GIERE	59
2. Dynamics, Data, and Noise in the Cognitive Sciences	
ANTHONY CHEMERO	71
3. Articulating the World: Experimental Practice and Conceptual Understanding	
JOSEPH ROUSE	94
4. Modeling/Experimentation: The Synthetic Strategy in the Study of Genetic Circuits	
TARJA KNUUTILA AND ANDREA LOETTIGERS	118
5. Will Your Policy Work? Experiments versus Models	
NANCY D. CARTWRIGHT	148
6. Causal Content and Global Laws: Grounding Modality in Experimental Practice	
JENANN ISMAEL	168
7. Experimental Flukes and Statistical Modeling in the Higgs Discovery	
DEBORAH MAYO	189

8. Values and Evidence in Model-Based Climate Forecasting	218
ERIC WINSBERG	
9. Validating Idealized Models	240
MICHAEL WEISBERG	

Symposium on Measurement

10. Introduction: The Changing Debates about Measurement	267
BAS C. VAN FRAASSEN	
11. Measurement Accuracy Realism	273
PAUL TELLER	
12. Let's Take the Metaphysical Bull by the Horns	299
BAS C. VAN FRAASSEN	
13. Taking the Metaphysical Bull by the Horns: Completing the Job	305
PAUL TELLER	
<i>Contributors</i>	315
<i>Index of Names</i>	319
<i>Index of Subjects</i>	323