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VOLUME XIV

METHODOLOGICAL AND HISTORICAL ESSAYS

IN THE NATURAL AND SOCIAL SCIENCES

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BOSTON STUDIES IN THE PHILOSOPHY OF SCIENCE

EDITED BY ROBERT S. COHEN AND MARX W. WARTOFSKY

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TABLE OF CONTENTS

PREFACE	VII
HERBERT FEIGL / Empiricism at Bay?: Revisions and a New Defense	1
ERNAN MCMULLIN / Empiricism at Sea	21
PHILIP L. QUINN / What Duhem Really Meant	33
MICHAEL POLANYI / Genius in Science	57
W. A. SUCHTING / Regularity and Law	73
ERNST MAYR / Teleological and Teleonomic, a New Analysis	91
J. E. MCGUIRE / Forces, Powers, Aethers, and Fields	119
DUDLEY SHAPER / Natural Science and the Future of Metaphysics	161
STANISA NOVAKOVIC / Is the Transition from an Old Theory to a New One of a Sudden and Unexpected Character?	173
WILLIAM BERKSON / Some Practical Issues in the Recent Controversy on the Nature of Scientific Revolutions	197
A. POLIKAROV / The Divergent-Convergent Method – A Heuristic Approach to Problem-Solving	211
FRED SOMMERS / The Logical and the Extra-Logical	235
ERNEST SOSA / What is a Logical Constant?	253
GOTTLOB FREGE / On the Law of Inertia	257
YEHUDA ELKANA / Scientific and Metaphysical Problems: Euler and Kant	277
W. W. BARTLEY, III / Theory of Language and Philosophy of Science as Instruments of Educational Reform: Wittgenstein and Popper as Austrian Schoolteachers	307
RICHARD POPKIN / Bible Criticism and Social Science	339
JINDŘICH ZELENÝ / Kant, Marx and the Modern Rationality	361
QUENTIN LAUER / The Marxist Conception of Science	377
WŁADYSŁAW KRAJEWSKI / The Idea of Statistical Law in Nineteenth Century Science	397

PREFACE

Modern philosophy of science has turned out to be a Pandora's box. Once opened, the puzzling monsters appeared: not only was the neat structure of classical physics radically changed, but a variety of broader questions were let loose, bearing on the nature of scientific inquiry and of human knowledge in general. Philosophy of science could not help becoming epistemological and historical, and could no longer avoid metaphysical questions, even when these were posed in disguise. Once the identification of scientific methodology with that of physics had been queried, not only did biology and psychology come under scrutiny as major modes of scientific inquiry, but so too did history and the social sciences – particularly economics, sociology and anthropology. And now, new 'monsters' are emerging – for example, medicine and political science as disciplined inquiries. This raises anew a much older question, namely whether the conception of science is to be distinguished from a wider conception of learning and inquiry? Or is science to be more deeply understood as the most adequate form of learning and inquiry, whose methods reach every domain of rational thought? Is modern science matured reason, or is it simply one historically adapted and limited species of western reason?

In our colloquia at Boston University, over the past fourteen years, we have been probing and testing the scope of philosophy of science. To be sure, our principal attention has been to the physical sciences, and the preceding volume of these *Studies* is devoted to some central questions in the understanding of contemporary physics. In this volume we have gathered a range of methodological and historical essays on the physical and social sciences, presented to the Boston Colloquium for the Philosophy of Science during 1969–72. There are three exceptions. Our friend and colleague, Azaria Polikarov, of the Bulgarian Academy of Sciences, spent several months as Research Associate at our Center and kindly contributed an essay. Also, by courtesy of Professors Edwin Levy and Howard Jackson of the University of British Columbia, we have

included their translation of the little-known essay of Frege on inertia, his "single published writing in non-deductive science". Finally, we are pleased that we can include a brief paper by another friend and colleague, Władisław Krajewski of the University of Warsaw.

The essays fall into several main groups: first, there are those primarily concerned with methodological and epistemological questions (Feigl, McMullin, Polanyi, Quinn, Suchting, Mayr, Novakovic, Berkson, Polikarov, and Frege). Second, there are studies in the history and development of scientific ideas (Bartley, Elkana, McGuire, Popkin, Lauer, Krajewski and Zeleny). Finally, Shapere's paper addresses itself to the importance of contemporary physical science for metaphysics; and those of Sommers and Sosa to philosophy of logic.

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R. S. COHEN
M. W. WARTOFSKY