PHILOSOPHY of SCIENCE

Official Journal of the Philosophy of Science Association



VOLUME 49, NUMBER 4

December, 1982

PHILOSOPHY OF SCIENCE

(ISSN 0031-8248) JOURNAL OF THE PHILOSOPHY OF SCIENCE ASSOCIATION

EDITORIAL BOARD:

ROBERT E. BUTTS, Editor-in-Chief

Peter Achinstein Peter Asquith Jeffrey Bub Richard Burian Nancy Cartwright Robert Causey Lindley Darden Anne Fagot Arthur Fine Jerry Fodor Dagfinn Follesdal Ronald Giere Clark Glymour Gary Gutting Ian Hacking William Harper Jagdish Hattiangadi Mary Hesse David Hull Lorenz Krüger Henry Kyburg, Jr. Larry Laudan Aristid Lindenmayer Peter Machamer David Malament Vaughn McKim John Nicholas Thomas Nickles Ilkka Niiniluoto Glenn Pearce Michael Ruse Kenneth Schaffner Dudley Shapere Brian Skyrms J. J. C. Smart Patrick Suppes Bas van Fraassen Marx Wartofsky

BOOK REVIEW EDITOR:

WILLIAM DEMOPOULOS

EDITORIAL ASSISTANT:

COPY ASSISTANT: Itamar Pitowsky

Peggy Dragišić

GOVERNING BOARD OF THE ASSOCIATION:

Ernan McMullin, President (1982) Robert S. Cohen, President-elect (1982) Mary Hesse, Past President (1982)

Peter Achinstein (1983) Lindley Darden (1983) Hartry Field (1983) David L. Hull (1982)

Peter Machamer (1983) Kenneth Schaffner (1982) Lawrence Sklar (1982) Frederick Suppe (1982)

EXECUTIVE SECRETARY:

Peter D. Asquith

MADE AND PRINTED IN THE USA BY Edwards Brothers, Inc., Ann Arbor, MI

PHILOSOPHY OF SCIENCE is published quarterly by the Philosophy of Science Association, 18 Morrill Hall, Department of Philosophy, Michigan State University, East Lansing, Michigan 48824. 1982 Subscription price \$32.50 U.S.A. (\$33.50 non-U.S.A.) per Volume. Single numbers \$9.00. 1982 Membership dues, which include subscription, \$30.00. Subscription inquiries should be directed to the Executive Secretary. Second-class postage paid at East Lansing, Michigan and at additional mailing offices. © 1982 by the Philosophy of Science Association:

CONTENTS*

THE CONCEPT OF OBSERVATION IN SCIENCE AND PHILOS- OPHY, Dudley Shapere	4
TOWARDS AN EMPIRICALLY ADEQUATE THEORY OF SCI- ENCE, JANET KOURANY	5
TWO COMMON ERRORS IN EXPLAINING BIOLOGICAL AND PSYCHOLOGICAL PHENOMENA, WILLIAM BECHTEL	5
ON THE SPACE-TIME ONTOLOGY OF PHYSICAL THEORIES, KENNETH L. MANDERS	5
PARTICULARS, SUBSTRATA, AND THE IDENTITY OF INDIS- CERNIBLES, Albert Casullo	5
IN DEFENSE OF CONVERGENT REALISM, CLYDE L. HARDIN AND ALEXANDER ROSENBERG	6
HARRÉ AND MADDEN'S MULTIFARIOUS ACCOUNT OF NAT- URAL NECESSITY, RAYMOND WOLLER	6
DISCUSSION: GENETICS, REDUCTION, AND FUNCTIONAL PSYCHOLOGY, PATRICIA KITCHER	6
DISCUSSION: LET'S DUMP HYPOTHETICO-DEDUCTIVISM FOR THE RIGHT REASONS, WILLIAM ROZEBOOM	6
BOOK REVIEWS Sociobiology and the Preemption of Social Science, Alexander Ro- senberg—Edward P. Stabler; Capital, Profits and Prices: An Essay in the Philosophy of Economics, Daniel M. Hausman—John McMillan; Science and Hypothesis, Larry Laudan—Thomas Nickles; Concep- tions of Ether: Studies in the History of Ether Theories 1700–1900, G. N. Cantor and M. J. S. Hodge, Editors—Steven Brush.	6
REFEREES FOR PHILOSOPHY OF SCIENCE	6
INDEX TO VOLUME 49	6

*The contents of PHILOSOPHY OF SCIENCE are utilized in compiling the following bibliographic sources: ABC Pol Sci; Biological Abstracts; Bulletin Signalëtique 519; Philosophie; Current Index to Statistics; Humanities Index; Index to Book Reviews in the Humanities; Isis Critical Bibliography; Language & Language Behavior Abstracts; Mathematics Review; Philosopher's Index; Psychological Abstracts; Repertoire Bibliographique de la Philosophie; Social Science Citation Index; Sociological Abstracts; Science Citation Index.