THE REALISTIC EMPIRICISM OF MACH, JAMES, AND RUSSELL

In the early twentieth century, Ernst Mach, William James, and Bertrand Russell founded a philosophical and scientific movement known as "neutral monism," based on the view that minds and physical objects are constructed out of elements or events which are neither mental nor physical, but neutral between the two. This movement offers a unified scientific outlook which includes sensations in human experience and events in the world of physics under one roof. In this book Erik C. Banks discusses this important movement as a whole for the first time. He explores the ways in which the three philosophers can be connected, and applies their ideas to contemporary problems in the philosophy of mind and the philosophy of science – in particular the relation of sensations to brain processes, and the problem of constructing extended bodies in space and time from particular events and causal relations.

ERIK C. BANKS is Associate Professor of Philosophy in the Department of Philosophy at Wright State University, Ohio. He is also author of *Ernst Mach's World Elements* (2003).

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Neutral monism reconceived

ERIK C. BANKS
Wright State University

CAMBRIDGE
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University Printing House, Cambridge CB2 8BS, United Kingdom

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org
Information on this title: www.cambridge.org/9781107073869

First published 2014

Printed in the United Kingdom by Clays, St Ives plc

A catalogue record for this publication is available from the British Library

Library of Congress Cataloging-in-Publication Data
Banks, Erik C.
The realistic empiricism of Mach, James, and Russell / Erik C. Banks.
pages cm
Includes bibliographical references.
ISBN 978-1-107-07386-9 (Hardback)
1. Empiricism. 2. Mach, Ernst, 1838–1916. 3. James, William, 1842–1910. 4. Russell, Bertrand, 1872–1970. I. Title.
B816.B36 2014
146′.44–dc23
2014010874

ISBN 978-1-107-07386-9 Hardback

Contents

List of figures

Preface and acknowledgments

This book is an historico-critical look at a realistic form of empiricism which one finds in the philosophy and science of Ernst Mach, William James, and Bertrand Russell. Some of the research in these chapters has appeared in my 2003 book *Ernst Mach's World Elements*, my 2005 article "Kant, Herbart and Riemann" in *Kant-Studien*, my 2010 article "Neutral Monism Reconsidered" in *Philosophical Psychology*, and my 2013 articles "Extension and Measurement: A Constructivist Program from Leibniz to Grassmann" in *Studies in the History and Philosophy of Science A* and "William James' Direct Realism: A Reconstruction" in *History of Philosophy Quarterly*.

Work on this book began during a Fulbright year in 2004–2005 in Germany, when I was a guest at the Max Planck Institute for the History of Science in Berlin. The first drafts of Chapter 6 were written there and I gave a talk which outlined my construction of extended quantities. After I started thinking about William James again, I ran into Michael Levin, waiting for tickets to Shakespeare in the Park, and we discussed my Jamesian version of direct realism in epistemology. His criticism, delivered on the spot, made me think harder about those ideas. In summer 2011, Jirí Wackermann invited me to work on the book during a stay at the Psychophysics Department of the Institute for Frontier Areas in Psychology, Freiburg im Breisgau, and Jirí, Harald Atmansprecher, and Roemer Hartmann gave me feedback on my presentation "Enhanced Physicalism," which I gave at the Institute's Theory Colloquium. Jirí's writings on Mach from the perspective of a working psychophysicist have deeply influenced my understanding of these issues. In 2012, Jordi Cat and Amit Hagar gave me the chance to present the talk "Extended Magnitudes" at the Indiana University Department of History and Philosophy of Science colloquium, where they provided strong feedback and critical comments. I gave another talk on "The Problem of Extension" at the 2012 meeting of the History of Philosophy of Science (HOPOS) society in Halifax and I benefited from

those comments in the preparation of the final chapter. Anonymous reviewers for the publisher, and the journals named above, helped me improve the manuscript. Finally, thanks, as always, to my mother Laurene Buckley, art historian, for teaching me how to do research, and for those long ago book sales at the New Fairfield Public Library and at the Strand when I was young, and to my father Richard T. Banks, architect, who taught me how to teach. I will always be grateful for their confidence in me.

I am a naturalist philosopher; for me, philosophy without science is empty and science without philosophy is blind. I see philosophy and science as continuous: methodological and speculative ideas that originate in philosophy, over many years, are gradually refined until they can be articulated quantitatively and tested and so become part of empirical science, at which point their origins are usually forgotten. We'll see several examples in this book. Most of my ideas and source materials come from rooting around in the history of science and following my interests there. Consequently, I think, those who will get the most out of the book are historico-philosophically minded scientists and naturalist philosophers who look to the history of science for their source material.

Conceptually, this book is about "what happens when something happens." It is about *events* in the natural world: events in physical science and events in the brain, which are gathered together under the common term of "elements." I use the historico-critical method to investigate the elements and their relation to science and philosophy. This method, which I learned from Mach's books, broadens and enriches the spectrum of contemporary philosophical ideas and vocabulary, while reconstructing concepts in a rigorous way. I have tried to keep the historical and conceptual goals separate as much as possible in the exposition, but I do hold that my realistic empiricist view is a direct descendent of its historical ancestor in the three original authors of the tradition. The reader can judge if I have been successful. I think the job of philosophy should be to look at the *whole* historical-conceptual spectrum of ideas and ask: what are the possibilities? I hope to show that realistic empiricism is not only an historically significant view, it is also well worth reconsidering today.