

Philosophy of Behavioral Biology

BOSTON STUDIES IN THE PHILOSOPHY OF SCIENCE

Editors

ROBERT S. COHEN, *Boston University*
JÜRGEN RENN, *Max Planck Institute for the History of Science*
KOSTAS GAVROGLU, *University of Athens*

Managing Editor

LINDY DIVARCI, *Max Planck Institute for the History of Science*

Editorial Board

THEODORE ARABATZIS, *University of Athens*
ALISA BOKULICH, *Boston University*
HEATHER E. DOUGLAS, *University of Pittsburgh*
JEAN GAYON, *Université Paris I*
THOMAS F. GLICK, *Boston University*
HUBERT GOENNER, *University of Goettingen*
JOHN HEILBRON, *University of California, Berkeley*
DIANA KORMOS-BUCHWALD, *California Institute of Technology*
CHRISTOPH LEHNER, *Max Planck Institute for the History of Science*
PETER McLAUGHLIN, *Universität Heidelberg*
AGUSTÍ NIETO-GALAN, *Universitat Autònoma de Barcelona*
NUCCIO ORDINE, *Università della Calabria*
ANA SIMÕES, *Universidade de Lisboa*
JOHN J. STACHEL, *Boston University*
SYLVAN S. SCHWEBER, *Harvard University*
BAICHUN ZHANG, *Chinese Academy of Science*

VOLUME 282

For further volumes:
<http://www.springer.com/series/5710>

Kathryn S. Plaisance • Thomas A.C. Reydon
Editors

Philosophy of Behavioral Biology

 Springer

Editors

Kathryn S. Plaisance
Centre for Knowledge Integration
University of Waterloo
200 University Ave W
Waterloo, ON N2L 3G1
Canada
kplaisan@uwaterloo.ca

Thomas A.C. Reydon
Institut für Philosophie & Center for
Philosophy and Ethics of Science (ZEWV)
Leibniz Universität Hannover
Im Moore 21
30167 Hannover
Germany
reydon@ww.uni-hannover.de

ISSN 0068-0346

ISBN 978-94-007-1950-7

e-ISBN 978-94-007-1951-4

DOI 10.1007/978-94-007-1951-4

Springer Dordrecht Heidelberg London New York

Library of Congress Control Number: 2011937557

© Springer Science+Business Media B.V. 2012

No part of this work may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission from the Publisher, with the exception of any material supplied specifically for the purpose of being entered and executed on a computer system, for exclusive use by the purchaser of the work.

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Contents

Part I Introduction

- 1 The Philosophy of Behavioral Biology** 3
Kathryn S. Plaisance and Thomas A.C. Reydon
- 2 Knowledge for What? Monist, Pluralist,
Pragmatist Approaches to the Sciences of Behavior**..... 25
Helen Longino

Part II Genetic Explanations of Behavior

- 3 Genome Wide Association Studies of Behavior
are Social Science** 43
Eric Turkheimer
- 4 Genetic Traits and Causal Explanation** 65
Robert Northcott

Part III Developmental Explanations of Behavior

- 5 From Cell-Surface Receptors to Higher Learning:
A Whole World of Experience** 85
Karola Stotz and Colin Allen
- 6 Re-Conceiving Nonhuman Animal Knowledge Through
Contemporary Primate Cognitive Studies**..... 125
Andrew Fenton

Part IV Evolutionary Explanations of Behavior

- 7 Evolving the Future: Sketching a Science
of Intentional Change** 149
David Sloan Wilson

8 Human Artistic Behaviour: Adaptation, Byproduct, or Cultural Group Selection?	167
Johan De Smedt and Helen De Cruz	
9 Sensory Exploitation: Underestimated in the Evolution of Art As Once in Sexual Selection Theory?	189
Jan Verpooten and Mark Nelissen	
10 Heuristic Evolutionary Psychology	217
Armin W. Schulz	
11 Evolutionary Psychology and the Problem of Neural Plasticity	235
Chuck Ward	
12 Free Will, Compatibilism, and the Human Nature Wars: Should We Be Worried?	255
Brian Garvey	
13 Altruistic Emotional Motivation: An Argument in Favour of Psychological Altruism	275
Christine Clavien	
14 The Neurobiology of Altruistic Punishment: A Moral Assessment of its Social Utility	297
Rebekka A. Klein	
Part V Neurobiological Explanations of Behavior	
15 Behavioral Traits, the Intentional Stance, and Biological Functions: What Neuroscience Explains	317
Marcel Weber	
16 From Reactive to Endogenously Active Dynamical Conceptions of the Brain	329
Adele Abrahamsen and William Bechtel	
Index	367

Contributors

Adele Abrahamsen Project Scientist, Center for Research in Language, University of California, San Diego, La Jolla (CA), USA, adele@crl.ucsd.edu

Colin Allen Provost Professor of History and Philosophy of Science, and Cognitive Science Program, Indiana University, Bloomington (IN), USA, colallen@indiana.edu

William Bechtel Professor of Philosophy, Department of Philosophy, and faculty member, Center for Chronobiology and Interdisciplinary Program in Cognitive Science, University of California, San Diego, La Jolla (CA), USA, bill@mechanism.ucsd.edu

Christine Clavien Junior Postdoctoral Lecturer, Department of Ecology and Evolution, University of Lausanne, Lausanne, Switzerland, christine.clavien@unil.ch

Helen De Cruz Postdoctoral Research Fellow, Centre for Logic and Analytical Philosophy, Research Foundation Flanders (FWO), Katholieke Universiteit Leuven, Leuven, Belgium, and Templeton Research Fellow, Somerville College, University of Oxford, Oxford, United Kingdom, helen.decruz@hiw.kuleuven.be

Johan De Smedt Research Fellow, Department of Philosophy and Ethics, Ghent University, Ghent, Belgium, and visiting research scholar, Uehiro Centre for Practical Ethics, University of Oxford, Oxford, United Kingdom, johan.desmedt@ugent.be

Andrew Fenton Assistant Professor, Department of Philosophy, California State University - Fresno, Fresno (CA), USA, andrew.fenton@gmail.com

Brian Garvey Lecturer in Philosophy, Department of Politics, Philosophy and Religion, Lancaster University, Lancaster, United Kingdom, b.garvey@lancaster.ac.uk

Rebekka A. Klein Dilthey-Fellow granted by Volkswagen Foundation, Institute for Systematic Theology, University of Halle-Wittenberg, Halle/S., Germany, kleinrebekka@hotmail.com

Helen Longino Clarence Irving Lewis Professor of Philosophy, Department of Philosophy, Stanford University, Stanford (CA), USA, hlongino@stanford.edu

Mark Nelissen Professor of Behavioral Biology, Department of Biology, University of Antwerp, Antwerpen, Belgium, mark.nelissen@ua.ac.be

Robert Northcott Lecturer, Department of Philosophy, Birkbeck College, London, United Kingdom, r.northcott@bbk.ac.uk

Kathryn S. Plaisance Assistant Professor, Centre for Knowledge Integration, cross-appointed to the Department of Philosophy, University of Waterloo, Waterloo (ON), Canada, kplaisan@uwaterloo.ca

Thomas A.C. Reydon Junior Professor of Philosophy of Biology, Institute of Philosophy & Center for Philosophy and Ethics of Science (ZEW), Leibniz Universität Hannover, Hannover, Germany, reydon@ww.uni-hannover.de

Armin W. Schulz Lecturer, Department of Philosophy, Logic, and Scientific Method, London School of Economics and Political Science, London, United Kingdom, a.w.schulz@lse.ac.uk

Karola Stotz Australian Research Fellow, Department of Philosophy, University of Sydney, Sydney, Australia, karola.stotz@sydney.edu.au

Eric Turkheimer Professor, Department of Psychology, University of Virginia, Charlottesville (VA), USA, ent3c@virginia.edu

Jan Verpooten PhD Research Fellow, Konrad Lorenz Institute for Evolution and Cognition Research, Altenberg, Austria and Department of Biology, University of Antwerp, Antwerpen, Belgium, jan.verpooten@ua.ac.be

Chuck Ward Associate Professor, Department of Philosophy, Millersville University, Millersville (PA), USA, chuck.ward@millersville.edu

Marcel Weber Professor, Department of Philosophy, University of Geneva, Geneva, Switzerland, marcel.weber@unige.ch

David Sloan Wilson SUNY Distinguished Professor, Departments of Biology and Anthropology, Binghamton University, Binghamton (NY), USA, dwilson@binghamton.edu