

Cambridge University Press  
978-0-521-82599-3 - Natural Kinds and Conceptual Change  
Joseph Laporte  
Frontmatter  
[More information](#)

---

## Natural Kinds and Conceptual Change

According to the received tradition, the language used to refer to natural kinds in scientific discourse remains stable even as theories about these kinds are refined. In this illuminating book, Joseph LaPorte argues that scientists do not discover that sentences about natural kinds, like ‘Whales are mammals, not fish’, are true rather than false. Instead, scientists find that these sentences were vague in the language of earlier speakers, and they refine the meanings of the relevant natural-kind terms to make the sentences true. Hence, scientists change the meanings of these terms. This conclusion prompts LaPorte to examine the consequences of this change in meaning for the issue of incommensurability and for the progress of science.

This book will appeal to students and professionals in the philosophy of science, the philosophy of biology, and the philosophy of language.

Joseph LaPorte is an assistant professor of philosophy at Hope College.

Cambridge University Press

978-0-521-82599-3 - Natural Kinds and Conceptual Change

Joseph Laporte

Frontmatter

[More information](#)

---

## CAMBRIDGE STUDIES IN PHILOSOPHY AND BIOLOGY

*General Editor*

Michael Ruse *Florida State University*

*Advisory Board*

Michael Donoghue *Yale University*

Jean Gayon *University of Paris*

Jonathan Hodge *University of Leeds*

Jane Maienschein *Arizona State University*

Jesús Mosterín *Instituto de Filosofía (Spanish Research Council)*

Elliott Sober *University of Wisconsin*

*Published Titles*

Alfred I. Tauber *The Immune Self: Theory or Metaphor?*

Elliott Sober *From a Biological Point of View*

Robert Brandon *Concepts and Methods in Evolutionary Biology*

Peter Godfrey-Smith *Complexity and the Function of Mind in Nature*

William A. Rottschaefer *The Biology and Psychology of Moral Agency*

Sahotra Sarkar *Genetics and Reductionism*

Jean Gayon *Darwinism's Struggle for Survival*

Jane Maienschein and Michael Ruse (eds.) *Biology and the Foundation of Ethics*

Jack Wilson *Biological Individuality*

Richard Creath and Jane Maienschein (eds.) *Biology and Epistemology*

Alexander Rosenberg *Darwinism in Philosophy, Social Science, and Policy*

Peter Beurton, Raphael Falk, and Hans-Jörg Rheinberger (eds.) *The Concept of the Gene in Development and Evolution*

David Hull *Science and Selection*

James G. Lennox *Aristotle's Philosophy of Biology*

Marc Ereshefsky *The Poverty of the Linnaean Hierarchy*

Kim Sterelny *The Evolution of Agency and Other Essays*

William S. Cooper *The Evolution of Reason*

Peter McLaughlin *What Functions Explain*

Steven Hecht Orzack and Elliott Sober (eds.) *Adaptationism and Optimality*

Brian G. Vortan *Searching for Sustainability*

Sandra D. Mitchell *Biological Complexity and Integrative Pluralism*

Gregory J. Cooper *The Science of the Struggle for Existence*

Cambridge University Press  
978-0-521-82599-3 - Natural Kinds and Conceptual Change  
Joseph Laporte  
Frontmatter  
[More information](#)

---

*To my wife, Carmelita,  
and in memory of Bob Jackson*

Cambridge University Press

978-0-521-82599-3 - Natural Kinds and Conceptual Change

Joseph Laporte

Frontmatter

[More information](#)

---

# Natural Kinds and Conceptual Change

JOSEPH LAPORTE

*Hope College*



**CAMBRIDGE**  
UNIVERSITY PRESS

Cambridge University Press  
978-0-521-82599-3 - Natural Kinds and Conceptual Change  
Joseph Laporte  
Frontmatter  
[More information](#)

## CAMBRIDGE UNIVERSITY PRESS

32 Avenue of the Americas, New York NY 10013-2473, USA

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](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9780521825993](http://www.cambridge.org/9780521825993)

© Joseph LaPorte 2004

This publication is in copyright. Subject to statutory exception and to the provisions of relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Cambridge University Press.

First published 2004

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

*Library of Congress Cataloguing in Publication data*

LaPorte, Joseph.

Natural kinds and conceptual change / Joseph LaPorte.

p. cm. – (Cambridge studies in philosophy and biology)

Includes bibliographical references (p. ) and index.

ISBN 0-521-82599-7

1. Biology – Philosophy. 2. Essence (Philosophy) I. Title. II. Series.

QH331.L29 2003

570'.1 – dc21

2003055148

ISBN 978-0-521-82599-3 Hardback

ISBN 978-0-521-10810-2 Paperback

Cambridge University Press has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication, and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.

## Contents

<i>Preface</i>	<i>page ix</i>
Introduction	1
1 What Is a Natural Kind, and Do Biological Taxa Qualify?	8
2 Natural Kinds, Rigidity, and Essence	33
3 Biological Kind Term Reference and the Discovery of Essence	63
4 Chemical Kind Term Reference and the Discovery of Essence	92
5 Linguistic Change and Incommensurability	112
6 Meaning Change, Theory Change, and Analyticity	150
<i>Notes</i>	175
<i>References</i>	201
<i>Index</i>	215

Cambridge University Press

978-0-521-82599-3 - Natural Kinds and Conceptual Change

Joseph Laporte

Frontmatter

[More information](#)

---



## Preface

This book is rooted in my 1998 doctoral dissertation, written at the University of Massachusetts, Amherst: “Natural-Kind Term Reference and the Discovery of Essence.” Roughly half of the chapters in the book (Chapters 2–4) have ancestors in the dissertation, though these chapters have all been extensively revised. Half of the chapters in the book (1, 5, and 6) are essentially new.

Because I outline the contents of this book in an Introduction, I will not do that here, too. Instead, I would like to express gratitude to many people and institutions for their support of this book. My dissertation director, Bruce Aune, is first on my list of those to whom I owe thanks. Bruce did much, both by criticism and by encouragement, to help to shepherd my dissertation to completion. I am very grateful for this philosophical and personal assistance and for the valuable help that Bruce has continued to provide since my graduate school days. Of particular relevance here is Bruce’s trusted reaction to much of the newer material in this book. I owe much of whatever success the book enjoys to Bruce.

I am grateful to other members of my dissertation committee as well. Lynne Rudder Baker has offered highly valuable help and advice on the dissertation and much more. I am most grateful to her. Fred Feldman was a source of helpful feedback. I discussed some of the biology with James Walker, a biological systematist serving as the outside member of the committee. I also owe thanks to Lucy O’Brien, who was not on my dissertation committee. Lucy served as my M.A. thesis advisor at University College London, offering helpful feedback on early work concerning topics that I would later take up in the dissertation and then in Chapters 3 and 4 of this book.

I have received valuable feedback on work in this book from many other sources. There are too many people to list here, though some I have acknowledged in articles that have already been published. In addition to the anonymous referees for Cambridge University Press, the most salient sources

### Preface

of help were Phillip Bricker and Eric Schliesser, both of whom read earlier drafts of substantial portions of the manuscript and provided helpful and detailed comments. David Hull also provided valuable comments that led to significant improvements in Chapters 3 and 4.

Before I took a year's leave to work on the book in 2000–2001, I was pleased and fortunate to meet Michael Ruse when he visited Hope College. Michael suggested that when I finish the book, I submit it to the series for which he is the general editor, Cambridge Studies in Philosophy and Biology. It was a good fit, and I am grateful for the suggestion. Three of the first four foundational chapters of the book address whether a well-known philosophical tradition has application in the biological realm: This is a question for philosophers of biology. In the final two chapters of the book, I discuss consequences of claims made in the first four chapters. Although an emphasis on biology in these final two chapters is not required, it is appropriate: Biological examples allow for more continuity with the earlier foundational chapters than alternatives would, and biological examples illustrate the relevant lessons well.

As I indicate above, some of the work in the book has appeared in print already in the form of articles. Section (I) of Chapter 2 contains some material, reworked and reorganized, from my “Rigidity and Kind,” *Philosophical Studies* 97: 293–316, copyright © 2000 Kluwer Academic Publishers, used with the kind permission of Kluwer Academic Publishers. Section (II) of Chapter 2 contains some material from “Essential Membership,” *Philosophy of Science* 64: 96–112, copyright © 1997 by the University of Chicago. Chapter 4 contains some material from my 1996 article “Chemical Kind Term Reference and the Discovery of Essence,” *Noûs* 30: 112–32. I gratefully acknowledge permission to use material from these journals.

Work on this book was generously supported by a grant from the National Endowment for the Humanities, an independent federal agency. Hope College generously provided time off from teaching and also further assistance, including but not limited to secretarial help on the bibliography and other matters: Nora Staal, Sally Smith, and especially Molly Baxter must be mentioned in this connection. With the NEH grant and the time off that it and Hope College provided, I was able to work on the book full time during the academic year 2000–2001. Had I not had that time to work, the book would not be finished today.