

Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert  
Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

---

The development  
and integration of behaviour

Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

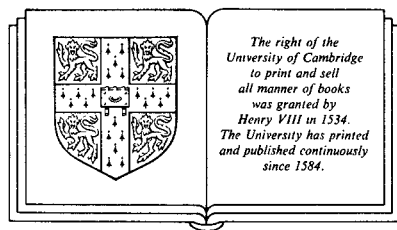
# The development and integration of behaviour

Essays in honour of Robert Hinde

*Edited by*

Patrick Bateson, FRS

*Professor of Ethology, University of Cambridge  
and Provost of King's College, Cambridge*



CAMBRIDGE UNIVERSITY PRESS

CAMBRIDGE

NEW YORK PORT CHESTER

MELBOURNE SYDNEY

Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paulo

Cambridge University Press

The Edinburgh Building, Cambridge CB2 2RU, UK

Published in the United States of America by Cambridge University Press, New York

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

Information on this title: [www.cambridge.org/9780521403566](http://www.cambridge.org/9780521403566)

© Cambridge University Press 1991

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 1991

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

*Library of Congress Cataloguing in Publication data*

The development and integration of behaviour: essays in honour of Robert  
Hinde/edited by Patrick Bateson.

p. cm.

Includes index.

1. Developmental psychobiology. 2. Developmental neurology. 3. Animal  
behaviour. 4. Hinde, Robert A. I. Hinde, Robert A. II. Bateson, P. P. G.

QP363.5.D46 1991 90-49250 CIP

599'.051—dc20

ISBN-13 978-0-521-40356-6 hardback

ISBN-10 0-521-40356-1 hardback

ISBN-13 978-0-521-40709-0 paperback

ISBN-10 0-521-40709-5 paperback

Transferred to digital printing 2006

Contents

<i>Contributors</i>	vii
<i>Preface</i>	ix
<b>I Introduction</b>	
1 Levels and Processes <i>Patrick Bateson</i>	3
<b>II The development of behaviour</b>	
2 Are there principles of behavioural development? <i>Patrick Bateson</i>	19
3 Differences in behavioural development in closely related species: birdsong <i>Peter Marler</i>	41
Commentary 1 <i>Robert A. Hinde</i>	71
<b>III Neural and endocrine aspects of behaviour</b>	
4 Analytical ethology and synthetic neuroscience <i>John C. Fentress</i>	77
5 Cerebral function and behaviour investigated through a study of filial imprinting <i>Gabriel Horn</i>	121
6 How does the environment influence the behavioural action of hormones? <i>J. B. Hutchison</i>	149
7 Testosterone, attention and memory <i>R. J. Andrew</i>	171
8 A psychobiological approach to maternal behaviour among the primates <i>Jay S. Rosenblatt</i>	191
Commentary 2 <i>Robert A. Hinde</i>	223
<b>IV Social organisation</b>	
9 The evolution of sex differences and the consequences of polygyny in mammals <i>T. H. Clutton-Brock</i>	229
10 What can we say about social structure? <i>Thelma E. Rowell</i>	255

Cambridge University Press  
0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde  
Edited by Patrick Bateson  
Frontmatter  
[More information](#)

Contents

11	On declaring commitment to a partner	<i>M. J. A. Simpson</i>	271
	Commentary 3	<i>Robert A. Hinde</i>	295
<b>V Human behaviour</b>			
12	Ethological light on psychoanalytical problems	<i>John Bowlby</i>	301
13	Temperament and attachment: An eclectic approach	<i>Joan Stevenson-Hinde</i>	315
14	A fresh look at ‘maternal deprivation’	<i>Michael Rutter</i>	331
15	Relationships and behaviour: the significance of Robert Hinde’s work for developmental psychology	<i>Judy Dunn</i>	375
16	The individual and the environment in human behavioural development	<i>Marian Radke-Yarrow</i>	389
	Commentary 4	<i>Robert A. Hinde</i>	411
<b>VI Aggression and war</b>			
17	An evolutionary perspective on human aggression	<i>David A. Hamburg</i>	419
	Commentary 5	<i>Robert A. Hinde</i>	459
<b>VII Memoirs</b>			
18	Some personal remarks	<i>Niko Tinbergen</i>	463
19	Robert Hinde in Africa	<i>Jane Goodall</i>	467
	Commentary 6	<i>Robert A. Hinde</i>	471
	Appendix 1	Robert Hinde’s Career	475
	Appendix 2	The Sub-Department of Animal Behaviour at Madingley	479
	Index		481

Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

## Contributors

R. J. Andrew, *School of Biological Sciences, University of Sussex, Falmer, Brighton, Sussex BN1 9QG, UK*

Patrick Bateson, *University of Cambridge, Sub-Department of Animal Behaviour, Madingley, Cambridge CB3 8AA, UK*

The Late John Bowlby

T. H. Clutton-Brock, *University of Cambridge, Department of Zoology, Large Animal Research Group, 34A Storeys Way, Cambridge CB3 0DT, UK*

Judy Dunn, *The Pennsylvania State University, College of Human Development, Henderson Human Development Building, University Park, Pennsylvania 16802, USA*

John C. Fentress, *Department of Psychology, Dalhousie University, Halifax, Nova Scotia B3H 4J1, Canada*

Jane Goodall, *Gombe Stream Reserve, Box 727, Dar es Salaam, Tanzania*

David A. Hamburg, *Carnegie Corporation of New York, 437 Madison Avenue, New York, NY 10022, USA*

Robert A. Hinde, *The Master's Lodge, St John's College, Cambridge CB2 1TP, UK*

Gabriel Horn, *University of Cambridge, Department of Zoology, Downing Street, Cambridge CB2 3EJ, UK*

J. B. Hutchison, *MRC Neuroendocrine Development and Behaviour Group, Institute of Animal Physiology and Genetics Research, Babraham, Cambridge CB2 4AT, UK*

Peter Marler, *Department of Zoology, Storer Hall, University of California at Davis, Davis, California 956163, USA*

Jay S. Rosenblatt, *Rutgers University, Institute of Animal Behaviour, 101 Warren Street, Newark, NJ 07102, USA*

Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

---

*Contributors*

Thelma E. Rowell, *Department of Zoology, University of California, Berkeley, California 94720, USA*

Michael Rutter, *Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, UK*

Michael J. A. Simpson, *Development and Integration of Behaviour Unit, Madingley, Cambridge CB3 8AA, UK*

Joan Stevenson-Hinde, *University of Cambridge, Sub-Department of Animal Behaviour, Madingley, Cambridge CB3 8AA, UK*

The Late Niko Tinbergen

Marian Radke-Yarrow, *Laboratory of Developmental Psychology, National Institute of Mental Health, Building 15K, Bethesda, Maryland 20892, USA*

Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

---

## Preface

Although this book was planned as a celebration for Robert Hinde, a quick glance at the contents will reveal that it is no ordinary Festschrift. The person in whose honour the book was written is also a contributor. Since Robert Hinde is still highly active in research and is likely to remain so for a long time to come, the conventional commemorative volume seemed out of place. It seemed much more appropriate to involve him in the construction and editing of the book and to ask him to comment on the essays. The objective of the book has not been to dwell on the contributions that Robert Hinde has made, but rather to focus on the themes and organising principles that have emerged in the fields in which he has been active. The hope was that the book would be forward-looking in its survey of the fields for which he has done so much.

Robert Hinde has exerted an extraordinary influence on ethology, primatology and most recently on studies of human behavioural biology and development. He has always revelled in diversity, but none the less certain distinctive themes run through the whole book as they have through his own writing. The introductory chapter discusses the recurring themes of crossing and recrossing the boundaries between different levels of analysis and the need to study processes. The main part of the book starts with behavioural development studied in animals, moves on to the neural and endocrine aspects of behaviour and then to the social behaviour of non-human primates. The final transition from monkeys to humans, which Robert Hinde made in his own research, leads to a substantial section on the development of social behaviour in humans. The last scientific chapter picks up his own deep concern about aggression and the peculiarly human institution of war.

Even though this is first and foremost a book about the development and integration of behaviour, it carries the personal flavour of the man all the



Cambridge University Press

0521407095 - The Development and Integration of Behaviour: Essays in Honour of Robert Hinde

Edited by Patrick Bateson

Frontmatter

[More information](#)

### *Preface*

contributors wished to honour. Each of the authors has had long-standing relationships with Robert Hinde. Some were mentors, others were former students and four were the senior members of his Medical Research Council Unit which had the same name as this book. In the final section of the book, one of his teachers and old friends, Niko Tinbergen, wrote a brief memoir just before he died. Jane Goodall, who came to Cambridge to write up her first chimpanzee studies for a PhD under Robert Hinde's supervision in the early 1960s, also writes of her memories of him when he visited her camp in Africa.

The idea for this book originally came from Peter Marler with whom I was to have edited the book. However, the period in which most editing had to be done was also one when he was moving his house and laboratory from New York to California. He was not able to contribute in the way that he would have wished if he had been less busy. I am deeply grateful to him for his initiative, for his encouragement in the slow process of bringing the book together, and for contributing a chapter when he had so much else to do. The same gratitude must be extended to the other contributors, also extremely busy people, who were asked to think deeply as well as broadly about the subjects on which they work. Moreover, they had to do so in the knowledge that their contribution would be subject to public comment by a man who at the best of times and to the best of his friends is a formidable critic. Inevitably, some delivered more rapidly than others and I must thank the quicker writers for their patience and the slower ones for their persistence. Above all, I must thank the man in whose honour this book was written for agreeing to involve himself in its construction. I deeply appreciate the trouble he has taken both in helping with the editing, which he has done with his usual penetrating eye, and for his commentaries on the contributions.

Patrick Bateson  
*Cambridge, April 1990*