

Cambridge University Press
978-1-107-01513-5 - Play, Playfulness, Creativity and Innovation
Patrick Bateson and Paul Martin
Frontmatter
[More information](#)

Play, Playfulness, Creativity and Innovation

What roles do playful behaviour and playful thought take in animal and human development? How does play relate to creativity and, in turn, to innovation?

Unravelling the different meanings of 'play', this book focuses on non-aggressive playful play. The authors emphasise its significance for development and evolution, before examining the importance of playfulness in creativity. This discussion sheds new light on the links between creativity and innovation, distinguishing between the generation of novel behaviour and ideas on the one hand, and the implementation of these novelties on the other. The authors then turn to the role of play in the development of the child and to parallels among play, humour and dreaming, along with the altered states of consciousness generated by some psychoactive drugs. A final chapter looks ahead to future research and to what remains to be discovered in this fascinating and important field.

PATRICK BATESON FRS is Emeritus Professor of Ethology at the University of Cambridge. He is President of the Zoological Society of London and a former Vice-President of the Royal Society. Much of his scientific career has been concerned with the development of behaviour. He is also co-author of *Plasticity, Robustness, Development and Evolution* (Cambridge, 2011).

PAUL MARTIN studied behavioural biology at the University of Cambridge before becoming a Harkness Fellow in the Department of Psychiatry and Behavioral Sciences at Stanford University. He has lectured and researched in behavioural biology at the University of Cambridge and is a former Fellow of Wolfson College.

The authors have published other successful books together, including *Measuring Behaviour: An Introductory Guide* (3rd edition, Cambridge, 2007).

Cambridge University Press
978-1-107-01513-5 - Play, Playfulness, Creativity and Innovation
Patrick Bateson and Paul Martin
Frontmatter
[More information](#)

Cambridge University Press
978-1-107-01513-5 - Play, Playfulness, Creativity and Innovation
Patrick Bateson and Paul Martin
Frontmatter
[More information](#)

Play, Playfulness, Creativity and Innovation

PATRICK BATESON
and
PAUL MARTIN



Cambridge University Press
978-1-107-01513-5 - Play, Playfulness, Creativity and Innovation
Patrick Bateson and Paul Martin
Frontmatter
[More information](#)

CAMBRIDGE
UNIVERSITY PRESS

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/9781107015135

© P. Bateson and P. Martin 2013

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 2013

4th printing 2015

Printed in the United States of America by Sheridan Books, Inc.

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

Library of Congress Cataloguing in Publication data

Bateson, P. P. G. (Paul Patrick Gordon), 1938–

Play, playfulness, creativity and innovation / Patrick Bateson,

University of Cambridge and Paul Martin, Wolfson College, Cambridge.

pages cm.

ISBN 978-1-107-01513-5 (hardback)

1. Play – Psychological aspects. 2. Creative ability. 3. Creative thinking. I. Martin, Paul H., 1958– II. Title.

BF717.B28 2013

155–dc23

2013001078

ISBN 978-1-107-01513-5 Hardback

ISBN 978-1-107-68934-3 Paperback

Additional resources for this publication at www.cambridge.org/9781107015135

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

Advance praise	<i>page</i> vii
Preface	ix
Acknowledgements	xi
1. Introduction	1
2. The biology of play	10
3. The functions of play	28
4. Evolution and play	42
5. Creativity in humans	55
6. Animals finding novel solutions	69
7. People and organisations	77
8. Childhood play and creativity	89
9. Humour and playfulness	103
10. Dreams, drugs and creativity	110
11. Pulling the threads together	122
Notes	130
References	135
Index	150

Cambridge University Press
978-1-107-01513-5 - Play, Playfulness, Creativity and Innovation
Patrick Bateson and Paul Martin
Frontmatter
[More information](#)

Cambridge University Press
978-1-107-01513-5 - Play, Playfulness, Creativity and Innovation
Patrick Bateson and Paul Martin
Frontmatter
[More information](#)

Advance praise

“This groundbreaking work will inform, engage and please an extensive audience, from play scholars and naturalists to those seeking an improved basis for practical approaches to social questions. The book’s originality, common-sense foundation, clear and readable language, and pragmatism are all commendable. The authors, whose landmark studies of behavioral development now span more than a quarter century, take pains to present a readable and direct exposition of their ideas. At the same time, they succeed in drawing bold distinctions when necessary and in forthrightly addressing concerns that span a broad range of social issues.

The authors informatively fine-tune previous concepts of play in their successful efforts to link play with the origins of the creative process across a broad biological spectrum. The book’s main themes – play as a driver of creative developmental options, play as a source of behavioral novelty to be integrated in the behavioral and social repertoire through the separate process of innovation, and play as a source of ideas and approaches for addressing broader issues of individuality and society – are woven together to produce a work of great general interest.”

– **Robert M. Fagen**, author of *Animal Play Behavior*

“Play will be to the 21st century what work was to the industrial age – our dominant way of knowing, doing and creating value. Therefore we need play theory and research, of a multidisciplinary and consilient nature, that can deepen and widen our understanding of this most dynamic of our human evolved capacities – so that we can design the best games and technologies, communities and organisations, that will constitute this new era. Patrick Bateson and Paul Martin have provided here a wonderful resource for play/game advocates in all fields of life. Rooted in extremely solid biological and ethological research, they make subtle and powerful linkages between the mammalian basis of play, and the necessary profusion of social and cultural forms it generates, in ways that will help shape reform in areas as diverse as childcare, innovative

enterprise and even drugs policy. *Play, Playfulness, Creativity and Innovation* sets a new standard for studies of the power and potential of play.”

– **Pat Kane**, musician and author of *The Play Ethic*

“Kittens toy with half-dead prey, dogs chase sticks, kids pretend to be teachers or airline pilots, and their parents revel in painting, gardening and sport. All are examples of play behavior. But whilst it is immediately apparent that play is gratifying, a compelling scientific explanation for why it evolved in the first place has remained elusive. Now Bateson and Martin, leading experts on animal behavior, provide an answer – play functions to generate creativity and stimulate innovation. It is an adaptation to get out of the rut and discover better solutions to life’s challenges. With beautifully clear writing and covering diverse literatures, from animal cognition, to child development, to dreaming and psychedelic drugs, Bateson and Martin’s text provides a wonderfully readable and much-needed summary of scientific knowledge of play.”

– **Kevin N. Laland**, University of St Andrews

“An important book at an important time. Yet again we are arguing over how best to fit our children to become useful productive citizens. Yes, we want them to be happy too, but the framework must somehow be put in. Play may be seen as a nice extra, part of becoming socially integrated. Bateson and Martin argue it is much, much more. Reviewing a wide range of studies, beginning with play in some of our animal relatives then to ourselves from infancy to adult life, with individuals and with businesses or institutions, they show how playfulness may be at the very core of creative thinking and action. During play we experiment, thinking outside the box, as we say. What can be established is a flexible framework much more adaptable to changing circumstances.

In effect, this book celebrates the human free spirit and is full of encouraging examples of what can be achieved. I hope it is widely studied in educational circles. Here some rich parents compete for tutors to get their 3 year olds into ‘good’ nursery schools and hence a ‘good’ primary at 5. In Finland, which out-scores us on most educational outcomes, primary begins at 7; two or three more years of play perhaps?”

– **Aubrey Manning**, University of Edinburgh, co-author of *An Introduction to Animal Behaviour* (Cambridge, 6th edition, 2012)

“In this highly readable and thought-provoking book, Patrick Bateson and Paul Martin show how play helps animals to find novel solutions and sows the evolutionary seeds for human creativity. They argue that being able to ‘break the rules’ in a protected environment, which is what play does, generates new ideas (creativity) and new ways of doing things (innovation). By looking at the conditions in which humans are at their most creative, they make a major contribution to what we might do to be even more creative than we are.”

– **Marian Stamp Dawkins**, University of Oxford, co-author of *An Introduction to Animal Behaviour* (Cambridge, 6th edition, 2012)

Preface

This book had its origins in the early 1980s, when we were working together at Cambridge University's Sub-Department of Animal Behaviour on the developmental origins of behaviour. Our research led us to become increasingly interested in play behaviour and its role in enabling the developing organism to acquire valuable skills and experience. We promised ourselves that one day we would write a book together on the subject. However, we were also preoccupied with many other duties. Work on the present book was put off again and again, although we collaborated on two other books, one of which is now in its third edition (Bateson & Martin, 1999; Martin & Bateson, 2007). Finally, though, we started to develop our ideas about play in book form.

The different meanings given to the term 'play' have created much confusion and have contributed to the view that play is enigmatic and almost beyond the boundaries of science. The categorisation of play as any behaviour that is not 'serious' has tended to trivialise an activity that is likely to have important beneficial outcomes, both in humans and other species. We became particularly interested in the links between playfulness and creativity, and aware of the difference between generating novel forms of behaviour or ideas (creativity) and implementing worthwhile inventions in a practical way (innovation). Inevitably the book has taken on a different shape from what we had originally envisaged and the focus has enlarged to take in other aspects of human affairs. Playful play can be a serious business.

One reader of an early draft version complained about our cautious use of phrases like ‘may be important’ and so forth, as though we were not quite confident enough to make the big points without qualifying them. We accept that this book is academic in its approach, and that where the evidence is equivocal or absent, we have said so. The book is aimed in part at academic biologists and psychologists. Our emphasis is on empirical evidence and on where further research needs to be carried out because the evidence is incomplete. However, we hope that our conclusions will also interest those who are concerned with creativity and innovation, whether for the public good or for commercial benefit. Playfulness in adult life affects the readiness with which people develop new ideas and has a broad influence on human relations. Given the importance of play in child development, we hope too that those involved in education will read it.

Patrick Bateson
Paul Martin
November 2012

Acknowledgements

We are very grateful to a number of friends and colleagues who read the drafts of the whole book. They are: Teresa Belton, Robert Fagen, Emma Flynn, Kevin Laland, Eugene Lim, Corina Logan and Aubrey Manning. We thank them and the following who read parts of the book in draft: Max Alexander, Jacqueline Barnes, Anna Bateson, Zahaan Bharmal, Nick Humphrey, Ben Malbon, Harriet Martin and Daniel Nettle. It goes without saying that they all contributed to the final version in a variety of invaluable ways and that all sins of omission and commission are our own. For part of the project, P.B. received a grant for his research from the Leverhulme Trust, which he thanks for its support.