The Cambridge Encyclopedia of Child Development

SECOND EDITION

The Cambridge Encyclopedia of Child Development remains the most authoritative and accessible account of all aspects of child development. Written by an international team of experts, its comprehensive coverage includes everything from prenatal development to adolescence, pediatrics, theories and research methods, physical development, social and emotional development, perceptual and cognitive development, language development, psychopathology, and parenting. The second edition has also been thoroughly updated to reflect major developments over the last decade in areas such as neuroscientific methods, developmental cognitive and social neuroscience, the effects of environmental influences on gene expression, and the relationship between human development and evolution. Throughout 124 entries, the *Encyclopedia* advocates an integrated, interdisciplinary approach to the study of child development. With clear, jargon-free style and user-friendly format, this is the essential reference for researchers and students of child development, as well as healthcare professionals, social workers, educators, and anyone interested in the well-being of children.

Features include:

- ★ Foreword by Charles Nelson
- ★ Comprehensive coverage
- ★ Cross-references between entries
- ★ Clear, user-friendly format
- ★ New section on future directions of research in child development

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The Cambridge Encyclopedia of CHILD DEVELOPMENT

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CAMBRIDGE
UNIVERSITY PRESS

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University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

4843/24, 2nd Floor, Ansari Road, Daryaganj, Delhi – 110002, India

79 Anson Road, #06-04/06, Singapore 079906

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/9781107103412
10.1017/9781316216491

First published 2017

Printed in the United Kingdom by TJ International Ltd. Padstow Cornwall

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

Library of Congress Cataloging-in-Publication Data
Names: Hopkins, Brian, 1940– editor. | Linkenauger, Sally, 1982–. Geangu, Elena, 1977–.
Title: The Cambridge encyclopedia of child development /
edited by Brian Hopkins, Lancaster University, Sally Linkenauger, Lancaster University.
Description: Second edition. | Cambridge, United Kingdom ; New York, NY : Cambridge University Press, 2017.
Identifiers: LCCN 2016051959 | ISBN 9781107103412 (hardback)
Subjects: LCSH: Child development–Encyclopedias.
Classification: LCC HQ767.9 .C352 2017 | DDC 305.231/03–dc23
LC record available at https://lccn.loc.gov/2016051959

ISBN 978-1-107-10341-2 Hardback

In memory of Jerome S. Bruner (1905–2016) and Anthony J. DeCasper (1940–2016)

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EDITORIAL PREFACE

Welcome to the second edition of *The Cambridge Encyclopedia of Child Development*. Why, you might ask, a second edition? To begin with, the study of child development has increasingly assimilated and accommodated a neuroscientific frame of reference as a consequence of an expanding suite of sophisticated brain-imaging (and genome-mapping) techniques since 2005. In turn, this inseparable theory–method partnership has opened new insights into our understanding of a range of developmental disorders. Then advances in evolutionary developmental biology led to a noticeable deepening of the long-neglected nexus between evolution and development. These, and other trends (e.g., with regard to statistical analyses suitable for [longitudinal] developmental research) in the last decade or so, have been embedded in interdisciplinary research endeavors, with a seemingly growing involvement of developmental psychologists; endeavors that are far from easy to achieve in practice.

In order to entertain these increments and additions to the study of child development, this new edition has been updated and expanded accordingly. It encompasses 124 entries by leading international researchers, while achieving a better geographical balance of contributors than the first edition, which had 90 entries. What is new is the provision of speculations and questions about future directions of research on the development of children. Once again, though, the book is intended to appeal to a broad audience ranging from students to researchers to practitioners. Each entry can be treated as a self-contained entity, but aided and abetted by extensive cross-references among them. Functioning as a source of reference, the contents of the book are to some degree a reflection of the editors' research interests. Moreover, as with the first edition, its age-related scope does not venture beyond the period of adolescence. Both content and scope are dictated by the limitations of space. Despite these unavoidable constraints, we have striven to be as comprehensive as possible. A glossary of terms is in preparation and will be published separately from the book on the internet.

With the appearance of the second edition, it is perhaps prudent and timely to take stock of the sorts of dominant influences mentioned that have introduced new perceived problems that need to be addressed. Restricting ourselves to neuroscience, then, which continues to change dramatically the landscape of research on child development, some unhelpful claims have overemphasized its impact in producing new knowledge about psychological development and brain–behavior relationships. These claims have been latched onto by sections of the popular press who then peddle it with oversimplistic media hype, which boils down to 'discovering' that the brain is involved in psychological functioning. Science, including the study of child development, is incremental and thus one has to guard against making statements like "Scientists are now able to …" (a relative minor one, all told). Yet neuroscience has had an undoubtedly beneficial influence on understanding how children develop, and its proponents do appear to have moderated some of its more hyperbolic statements that have appeared on occasion in the past (e.g., see comments by Elkund, Nichols, & Knutson, 2016).

There is a fear, however, that psychology will be eviscerated by neuroscience. This fear is very unlikely to be realized because neuroscience theory can only progress with reference to functions as expressed in unalloyed observable behavior. More of a problem is that the import of neuroscience's armoury of imaging and mapping techniques could give rise to a naïve form of reductionism, and thus eye-catching headlines, that would serve to feed a media circus with all its inherent dangers (e.g., building up false hopes of a cure for disorder X).

There is a more worrying side to neuroscience for developmentalists whose research does not encompass brain imaging. This is that research funding is more problematic for those devoted to the study of behavioral development without the aid of one or more of the neuroscientific techniques. Most noticeable in the USA, it stems from a change in National Institute of Mental Health (NIMH) policy round about 2010 aimed at improving diagnostic criteria for mental illnesses. At root, the policy change has meant that psychologists need to seek out

more molecular foundations for behavior, including, for example, not only the outcomes of brain- and genome-mapping but also hormonal associations as a means of gaining improvements in diagnostic criteria. It proved to be a pervasive policy change that filtered through to affect the course of funding for developmental research awarded by both NIMH and the National Science Foundation. Expressed crudely: no brain-imaging = no funding.

In this book, you will find neuroscientific research and methods widely covered and written in an accessible style. You will also find a substantial number of entries that do not subscribe to this genre of research. Both approaches are needed for a decidedly thoroughgoing approach to child development.

A number of colleagues deserve our gratitude in helping us to bring the book to fruition. For a start, there are some 20 reviewers whose comments were of great help in improving the quality of individual contributions. Their help has been acknowledged on a separate page. In particular, three people were a ready source of advice and encouragement from the beginning. Thanks then to Albert Gramsbergen, George Michel, and Ron Oppenheim. Finally, a special debt of gratitude is expressed to the in-house editorial team at Cambridge University Press: Hetty Marx, Rebecca Taylor, Janka Romero, and Emma Collison. We also need to thank Sue Browning, copy editor, and Jenny Slater, production manager, for their outstanding care and attention during the final stages of bringing this book to fruition. The same also applies to another member of the team: Sara Brunton, our proofreader.

Brian Hopkins, Elena Geangu, and Sally Linkenauger
Lancaster, 2016

A companion to the Encyclopedia is the Lancaster Glossary of Child Development that contains definitions and descriptions of more than 1000 terms to be found in the book. It should be pointed out that the glossary is a 'work in progress', and readers are encouraged to contact the first editor for any queries and potential contributions.

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URL for glossary:
https://lgcd.psych.lancs.ac.uk/wiki/projects/73E9N618p

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FOREWORD

The boundaries that define the field of child development are becoming increasingly blurred, as developmental science as a whole becomes progressively more interdisciplinary. Just a few decades ago, for example, neuroscience and molecular biology did not exist; even a decade ago, the field of epigenetics was but a niche field within the broader field of cancer biology. When Carmichael's *Manual of Child Psychology* first appeared in 1946, it was a single volume; when this was re-issued by Paul Mussen in 1970, it appeared as two volumes. Two decades later, it had doubled to four volumes. Over and above compendia such as the *Handbook of Child Psychology*, there has also been a proliferation of scientific journals over the past decade; for example, where once there was a single *Nature* journal, there are now more than two dozen journals published under the *Nature* banner. In addition, there has also been an explosion of open-access journals. The sheer volume of information now available to students and scholars of child development is overwhelming and our ability to stay abreast of advances in the field is daunting. Even if we limited ourselves to receiving only the table of contents of the journals that comprise the broader discipline of child development, our inboxes would rapidly fill up on a daily basis.

Given the near-impossible feat of staying on top of the latest advances in neuro-, bio-, psycho-, social-development, the field desperately needs a resource that is accessibly and succinctly written. Such a resource would be invaluable not only for helping us become conversant in the many 'languages' of child development and in preparing lectures for students, but would also provide a roadmap as to where the field is heading. Fortunately, such a resource exists with the 2nd edition of *The Cambridge Encyclopedia of Child Development*. Hopkins, Geangu, and Linkenauger have done the field a huge service by compiling a volume that is divided into 11 topical areas, and contains more than 100 entries. The entries are short and to the point, yet provide all the highlights necessary to understand the state of the field in each sub-discipline; they do a very good job of capturing the essence of each topic. The book begins with a series of entries focused on developmental theory and concludes with a section on where the field is headed; in between are individual contributions that focus on specific content areas, some by their very nature being rather narrow (e.g., fetal and neonatal magnetoencephalography), and others much broader (e.g., reading and writing). The encyclopedia as a whole should serve as an invaluable resource for beginning students and other interested parties wishing to grasp the richness of the field as well as advanced scholars who wish to update their knowledge of areas beyond their own field of expertise.

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