

Children's Thinking



Developmental Function and Individual Differences

Third Edition

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Printed in Canada

4 5 6 0 3 0 2

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Library of Congress Cataloging-in-Publication Data

Bjorklund, David F.

Children's thinking : developmental function and individual
differences / David F. Bjorklund. — 3rd ed.

p. cm.

Includes bibliographical references and index.

ISBN 0-534-35660-5

1. Cognition in children. 2. Individual differences in children.

I. Title.

BF723.C5B48 1999

1555.4'13—dc21

99-34362

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Preface



The field of cognitive development continues to be dynamic. Ideas and findings from a variety of areas combine to produce a picture of a developing child who is born prepared to make some sense of the world, but whose mind is also shaped by forces in the physical and social environment. This theme, of the continuous transaction between a child's biological constitution (including genetics) and his or her physical and social environment, continues to serve as a focus for the third edition. This book is still unique in that it deals with both developmental function and individual differences in children's thinking. But much is new and exciting in the field of cognitive development, and much of it is presented in the pages that follow.

The third edition, as did the first two, contains 14 chapters, but I have made some changes relative to the second edition. Both the second and third editions included chapters on Piaget's theory, information-processing approaches, perception, memory, language, representation, and social cognition; two chapters on intelligence; and an introductory chapter. One chapter omitted from the third edition is on emerging theories of cognitive development. The theories formerly presented in that chapter are now integrated in the chapter on Piaget (Chapter 4 "Piaget's Theory and the Neo-Piagetians") and in the chapter on information-processing approaches to cognitive development (Chapter 5). Most of the material from two former chapters, "Reading and Number Concepts" and "Culture, Schooling, and

Cognition," have been combined into a single "new" chapter, "Schooling and Cognition" (Chapter 12).

There are two truly new chapters in this edition. Early in the book (Chapter 3), I introduce the sociocultural perspective of development. This perspective is rooted in the rediscovery of the work of the Soviet psychologist Lev Vygotsky, but it also appears in the developmental contextual approaches of such American psychologists as Richard Lerner and Barbara Rogoff. I tried to emphasize in the second edition the importance of taking a sociocultural perspective and that such a perspective is not at odds with the idea that children's cognitive development is strongly influenced by their biology. This point is made even clearer in this edition by the inclusion of this brief chapter, immediately following the Chapter 2, "Biological Bases of Cognitive Development."

The second new chapter is on problem solving and reasoning (Chapter 10). I added this chapter at the request of reviewers and people who have used the second edition. The omission of a chapter devoted to problem solving from the previous editions was obvious. I had never been overly enamored by the topic, so it was with some reluctance that I delved into the literature. What I found surprised me. There's much "new" and exciting in the well-worn area of children's problem solving, and I've tried to capture some of this excitement. I may even try an experiment or two in my own laboratory based on some of the ideas I gleaned while preparing this chapter.

I have also added a brief epilogue at the end of the book. In this epilogue, I identified seven “truths” about cognitive development, based on the research and theory presented in the preceding 14 chapters. These “truths” are actually themes introduced in Chapter 1, but themes can get easily lost while working one’s way through the details of the subsequent 13 chapters. My goal with the epilogue was to show that the field of cognitive development does indeed tell a coherent story, even if it is sometimes difficult to follow when you are trying to master the intricacies of the specific topics within the field.

Much is also new in the “old” chapters. “Biological Bases of Cognitive Development” (Chapter 2) includes new research in the field of developmental cognitive neuroscience and evolutionary perspectives of cognitive development, including selectionist theories of development and cognition. As in the previous edition, the chapter is written for students who have no substantial background in biology. Although the book is written so that most of this chapter can be skipped without affecting readers’ comprehension of the rest of the book, I strongly recommend that all students read at least the first section of Chapter 2, which introduces developmental models that deal seriously with the interaction of biological and environmental factors. Included are the developmental systems approach (or developmental contextualism) proposed by Gottlieb, Lerner, and others, and models from behavioral genetics, particularly Scarr and McCartney’s genotype → environment theory. These perspectives provide models for thinking about how nature and nurture interact to produce the intellectually varied creatures that human infants and children become. I think even biophobic students will find these perspectives interesting (even if they don’t fully agree with them).

Related to issues of biological influences on cognitive development are the ideas of neo-nativists and their detractors and what it means for something to be “innate.” These ideas are introduced in the opening chapter, and the debate about just how much knowledge infants come into the world with is highlighted in several chapters, particularly those on perception (Chapter 6) and representation (Chapter 7). The past five years has seen an explo-

sion of behavioral genetics research on intelligence, and this new work is discussed in Chapter 14, along with other fascinating research on the modifiability of the intelligence of seriously deprived children and of environmental factors that affect the development of cognition during childhood.

The chapter on language development (Chapter 9) has been reorganized, and a connectionist explanation of language development is presented along with the more traditional Chomskian perspective. The chapter on memory development (Chapter 8) has also been reorganized to give the reader a better feel for the importance of memory in children’s everyday lives, as well as its significance on laboratory and school-type tasks. Neo-Piagetian theories have been included along with Piaget’s theory (Chapter 4) to give the reader a better appreciation of underlying assumptions that many of these newer theories share with Piaget. Included in Chapter 4 is a discussion of the new “theory theories” of cognitive development, particularly as presented by Alison Gopnik and Andrew Meltzoff. Emergent literacy is discussed in Chapter 12, “Schooling and Cognition,” as is a brief discussion of the “reading wars” between the phonics and whole-language perspectives.

I have included many examples of cultural differences and similarities in cognitive development. This is the focus of much of the chapter on the sociocultural perspective of cognitive development (Chapter 3), but cultural differences are also featured in the chapters on Piaget’s theory, information processing, memory, language, and schooling and cognition. I have also included the often-controversial topic of gender differences in some chapters, notably in the chapters on perception, memory, language, social cognition, and schooling and cognition. Although always a politically “hot” topic, I think examining reliable gender differences can tell us something about development in general and about individual differences that are not gender related. I have tried to present these data and theories in a responsible and noninflammatory way; moreover, the dominant theme of this book is that biological and environmental effects interact in complex and dynamic ways, making any explanation of either biological or environmental determinism simply wrong.

In an effort to make the book a bit more readable for undergraduate students, I have reduced the number of citations. One result of this is that I fail to acknowledge many authors who made important contributions to the field, and I apologize for this. But on the plus side, I believe that this makes the text more readable and prevents the reference section from getting too large. There are about 100 fewer references in the third edition than there were in the second. Of the approximately 1600 references, about 550 of them (34%) are new, most of them presenting research and theory published in the past five years. Approximately 630 references that were in the second edition have been omitted from the third.

I have done my best to make this book readable. I have attempted to present complicated theory and data in an intellectually honest way and to be comprehensible (and, I hope, exciting) to advanced undergraduate and graduate students. I have provided examples of actual children whenever possible, although I have avoided making the book a list of cute stories devoid of theoretical concepts. I have also made liberal use of figures and tables (140 in total, 30% new to this edition) to support the text and to foster comprehension. I have sprinkled through the book several cartoons, which I find often make a point better than a couple of pages of text, and I have included about as many photographs, mainly to illustrate some procedure or apparatus.

I have kept several pedagogical features that I first introduced in the second edition. These include the “Key Terms and Concepts” and “Suggested Readings” sections at the end of each chapter, and a glossary at the end of the book. Key terms and their definitions are presented in the same order they were found in the chapter, and all terms are also presented alphabetically in the glossary. I provide a brief paragraph about each suggested reading to explain why each particular paper or book is worth perusing.

I’ve enjoyed writing this third edition and have learned a lot in the process. I hope that this book conveys the excitement I felt in discovering some of these new findings in the field of cognitive development. The book is not just about “what’s new,” however, but about the field as a whole, including classic

studies from earlier decades. Although I have focused on the “new,” I have attempted not to forget the “tried and true” research that still informs us about the nature of children’s thinking today. And I have tried to make connections among different levels of analysis—macroprocesses and microprocesses, biology and environment, developmental function and individual differences—to provide a synthesis of the field of cognitive development. I have had great fun while doing this.

Acknowledgments

Anyone who writes a book such as this does so with much help from many people. My greatest gratitude goes to my wife, Barbara. Barbara provided constructive criticism on many chapters, while working on a textbook of her own—all in addition to being a supportive and understanding spouse. My deepest thanks and love go to Barbara, and I hope I can repay the debt.

I would like to thank my editors, Jim Brace-Thompson and Stacey Purviance, and the Wadsworth staff for all the work they did to keep this book on schedule. I also want to thank my students and colleagues for their comments on early versions of chapters, including Rhonda Douglas Brown, Susan Eagan, Cynthia Park, and Kristina Rosenblum. Finally, I would like to thank the conscientious professional reviewers for their consistently constructive comments:

Mark Alcorn, University of Northern Colorado
 Phillip M. Clark, Ohio State University
 John A. Dixon, Trinity University
 Jane F. Gaultney, University of North Carolina—Charlotte
 Rebecca J. Glover, University of North Texas
 Catherine Harris, Boston University
 Marian Heinrichs, University of Minnesota
 Katherine Kipp, University of Georgia
 John J. Rieser, Vanderbilt University

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1



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Cognition • Development

Some Issues in Cognitive Development

Stages of Development • Domain-General versus Domain-Specific Abilities

Nature and Nurture • The Stability and Plasticity of Intelligence

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