



Fifth
Canadian
Edition

DEVELOPMENTAL PSYCHOLOGY

**INFANCY AND
CHILDHOOD**

Shaffer
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Developmental Psychology

Infancy and Childhood

FIFTH CANADIAN EDITION

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Developmental Psychology, Fifth Canadian Edition

by David R. Shaffer, Katherine Kipp, Eileen Wood, Teena Willoughby, Kim P. Roberts, Alexandra Gottardo, Tobias Krettenauer, Joanne Lee, and Nicky Newton

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Cover Design:
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Cover Image:
SensorSpot/Getty

Compositor:
MPS Limited

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Adapted from *Developmental Psychology*, Ninth Edition, by David R. Shaffer and Katherine Kipp, published by Wadsworth. Copyright ©2014 by Cengage Learning.

Printed and bound in Canada
1 2 3 4 22 21 20 19

For more information contact Nelson Education Ltd., 1120 Birchmount Road, Toronto, Ontario, M1K 5G4. Or you can visit our Internet site at nelson.com

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Library and Archives Canada Cataloguing in Publication

Shaffer, David R. (David Reed), author

Developmental psychology : infancy and childhood / David R. Shaffer (University of Georgia), Katherine Kipp (University of Georgia), Eileen Wood (Wilfrid Laurier University), Teena Willoughby (Brock University), Kim P. Roberts, Alexandra Gottardo, Tobias Krettenauer, Joanne Lee, Nicky Newton. — Fifth Canadian edition.

Includes bibliographical references and index.

Issued in print and electronic formats.

ISBN 978-0-17-687397-4 (softcover).—ISBN 978-0-17-687607-4 (PDF)

1. Child psychology—Textbooks. 2. Adolescent psychology—Textbooks. 3. Textbooks. I. Title.

BF721.S4688 2019 155.4
C2018-906422-6
C2018-906423-4

ISBN-13: 978-0-17-687397-4
ISBN-10: 0-17-687397-X

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Preface

You will note that this fifth Canadian edition of *Developmental Psychology: Infancy and Childhood* differs significantly from its predecessors. The revised title reflects a change in focus, and the list of authors reflects a collaborative effort to create a timely, meaningful, and accurate developmental textbook for Canadian students. Although this text has always been written by multiple authors, the fifth Canadian edition is unique as it reflects the expertise of seven Canadian developmental researchers (along with two original authors from the United States) working together to create a comprehensive yet streamlined text that reflects the many domains of developmental psychology. In fact, the order of authorship among the Canadian contributors was decided randomly as all contributed equally to this edition. This edition is also unique in its focus. Where earlier editions examined development through childhood and adolescence, this edition has been streamlined to focus on childhood (starting from before birth up until about 12 years of age). In making this transition, we were able to further refine, update, and elaborate on the information presented in our fourth edition. Importantly, given the time between the fourth and fifth editions, considerable revisions were made to accommodate the fast pace of change in the research literature. We have continued to couch the content in terms of issues faced by Canadians, but we have also incorporated research from a range of countries to provide as complete a picture as possible.

Like the previous edition, this text provides an overview of child development that reflects the best theories, research, and practical advice that developmentalists have to offer. It is a substantive developmental text that we hope is interesting, accurate, up to date, and written in clear, concise language that both introductory and more advanced students can easily understand. We believe that a good text should talk *to* rather than *at* its readers. It should anticipate their interests, questions, and concerns. It should treat them as active participants in the learning process. It should stress the processes that underlie developmental change, so that students come away from the course with a firm understanding of the causes and complexities of development. We wanted this text to challenge students to think about the fascinating process of human development, to share in the excitement of our dynamic discipline, and to acquire a knowledge of developmental principles that will serve them well in their roles as parents, teachers, nurses, childcare workers, pediatricians, psychologists, nurses, academics, or in any other capacity in which they may one day influence the lives of developing individuals.

Philosophy

Certain philosophical views underlie any systematic treatment of a field as broad as child development. The philosophy that guided the construction of this text can be summarized as follows.

We Believe in Theoretical Eclecticism

Many theories have contributed to our knowledge about child development, and this theoretical diversity is a strength rather than a weakness. Some theories may do a better job than others of explaining particular aspects of development, but we see time and again that *different theories emphasize different aspects of development* and that knowledge of many theories is necessary to explain the course and complexities of human development. So this book does not attempt to convince its readers that any one theoretical viewpoint is best. The behaviouristic, cognitive-developmental, ecological, sociocultural, information processing, ethological, behavioural, and genetic/biological viewpoints (as well as several less encompassing theories that address selected aspects of development) are all treated with respect.

The Best Information about Human Development Comes from Systematic Research

To teach this course effectively, one must convince students of the value of theory and systematic research. Although there are many ways to achieve that objective, this text discusses the many methodological approaches that researchers use to test their theories and answer questions about developing children. Care has been taken to explain why there is no one best method for studying developing individuals and why our most reliable findings are those that can be replicated using a variety of methods.

We Believe in a Strong Process Orientation

In recent years, investigators have become increasingly concerned about identifying and understanding developmental processes—the biological and environmental factors that cause us to change—and this book reflects that concern. We believe that students are more likely to remember what develops, and when, if they know and understand the reasons that these developments take place.

We Believe in a Strong Contextual Orientation

One important lesson that developmentalists have learned is that children live in historical eras and sociocultural contexts that affect every aspect of their development. We have highlighted these contextual influences in two ways. First, *cross-cultural comparisons* are discussed in various places throughout the text. Cross-cultural research helps us see how human beings can be so much alike and, at the same time, so different from one another. Second, the impacts of such immediate contextual influences as our families, neighbourhoods, schools, and peer groups are considered throughout the first 15 chapters as we discuss each aspect of human development, and again in the final two chapters as important topics in their own right.

Human Development Is a Holistic Process

Although individual researchers may concentrate on particular topics such as physical development, cognitive development, or the development of moral reasoning, development is not piecemeal but *holistic*: human beings are at once physical, cognitive, social, and emotional creatures, and each of these components of self depends, in part, on changes taking place in other areas of development. This holistic perspective is emphasized throughout the text.

A Developmental Text Should Be a Resource Book for Students—One That Reflects Current Knowledge

This text cites many new studies and new programs of research—many are “hot off the press” (see The Inside Track boxes)—to ensure that our coverage represents the most up-to-date understanding of topics in developmental psychology. However, we have avoided the tendency to ignore older research simply because it is older. Many of the classics of our discipline are featured prominently throughout the text to illustrate important breakthroughs and to show how our knowledge about development builds on earlier findings and insights.

Organization

There are two traditional ways of presenting human development. In the *chronological*, or “ages and stages,” approach, the coverage begins at conception and proceeds through the lifespan, using ages or chronological periods as the organizing principle. By contrast, the *topical* approach is organized around areas of development and follows each from its origins to its mature forms. Each of these presentations has its advantages and disadvantages. On the one hand, a chronological focus highlights the holistic character of development but may obscure the links between early and later events within each developmental domain. On the other hand, a topical approach highlights developmental sequences and processes but at the risk of failing to convey that development is holistic in nature.

This book is organized topically to focus on developmental processes and to provide the student with an uninterrupted view of the sequences of change that children experience within each developmental domain. In our opinion, this topical approach best allows the reader to appreciate the flow of development—the systematic, and often truly dramatic transformations that take place over the course of childhood, as well as the developmental continuities that make each individual a reflection of his or her past self. At the same time, we consider it essential to paint a holistic portrait of the developing person. To accomplish this aim, we have stressed the fundamental interplay among biological, cognitive, social, and cultural influences *for each and every aspect of development*. So, even though this text is organized topically, students will not lose sight of the whole person and the holistic character of human development.

Content

We made an effort to retain in this edition those qualities of earlier editions that students and professors say they like. One such quality is the division of the book into five parts.

- **Part I: Theory and Research in the Development Sciences.** This first part presents an orientation to the discipline and the tools of the trade, including a thorough discussion and illustration of research methodologies in Chapter 1 and a succinct review of the major theories of human development in Chapter 2. These chapters illustrate why research methods and theories are important to an understanding of human development. The coverage also analyzes the contributions and the limitations of each research method and each major theory.
- **Part II: Foundations of Development.** Chapters 3 to 6 address foundations of development strongly influenced by biological factors. Chapter 3 focuses on hereditary contributions to human development and illustrates how genes and environments interact to influence most human characteristics. Chapters 4 and 5 focus on prenatal development and on the many prenatal and perinatal

environmental factors that influence a newborn's health and readiness for adapting to the world outside the womb. Chapter 6 is devoted to physical growth, including the development of the brain and motor skills.

- **Part III: Language, Learning, and Cognitive Development.** The five chapters of Part III address the many theories and the voluminous research pertaining to the development of language, learning capabilities, and intellectual development. Chapter 7 begins exploring the growth of perceptual and learning capabilities—two crucial cognitive foundations for many other aspects of development. Chapter 8 is devoted to major viewpoints of intellectual growth including Piaget's cognitive-developmental theory, Case's neo-Piagetian theory, and Vygotsky's sociocultural theory. These theories are covered in detail, for each is important to understanding the social, emotional, and language developments that are covered in later chapters. Chapter 9 explores the information-processing viewpoint and connectionist models. The application of information-processing research in everyday contexts is covered through topics such as reasoning and mathematics. Chapter 10 focuses on individual differences in intellectual performance. Here we review the intelligence testing movement, the many factors that influence children's IQ scores, and the merits of compensatory interventions designed to improve intellectual performance. The chapter concludes with a discussion of creative abilities and their development. Chapter 11 explores the fascinating topic of language development and addresses a number of intriguing questions such as, Do children acquire language more easily than adults? Is sign language a true language? Does bilingualism promote or inhibit linguistic proficiency and cognitive development?
- **Part IV: Social and Personality Development.** The next four chapters focus on crucial aspects of social and personality development. Chapter 12 examines the process of emotional development, the developmental significance of individual differences in temperament, and the growth and implications for later development of the emotional attachments that children form with their close companions. Chapter 13, on the self, traces the development of the self-concept and children's emerging sense of self-esteem, and the growth of social cognition and interpersonal understanding. Chapter 14 focuses on sex differences and similarities and on how biological factors, social forces, and intellectual growth can interact to steer males and females toward different gender roles. The chapter also examines the utility (or lack thereof) of traditional gender roles and discusses ways in which we might be more successful at combating unfounded gender stereotypes. Chapter 15 examines interrelated aspects of social development that people often consider when making judgments about one's character: moral development and aggression.
- **Part V: The Ecology of Development.** The final section of the text concentrates on the settings, or contexts, in which people develop—the ecology of development. Chapter 16 is devoted to family influences, focusing on the functions that families serve, patterns of child rearing that foster adaptive or maladaptive outcomes, the impacts of siblings on developing children, and the effects of family diversities and family transitions on child development. Chapter 17 concludes the text with an in-depth examination of three extra-familial influences on developing children: peers, schools, and the impact of media.

■ New to the Fifth Canadian Edition

One of the most challenging tasks we face when writing a Canadian edition is understanding what defines a Canadian text. What should a Canadian text in developmental psychology look like compared to the American texts we are accustomed to seeing? Although, for the most part, Canadian and American researchers investigate

developmental psychology using the same theories, philosophies, designs, methods, and analyses, we acknowledge that there are differences—some obvious, some not—in how research is conducted.

One of the obvious areas of difference between the two cultures is that of legal issues. Canadians and Americans have different legislation and therefore different expectations on such basic issues as health care, parental leave, acceptable discipline, and the right to appropriate education. There are more subtle differences, too, that also need to be addressed. For example, though both countries promote diversity, they do so in different ways. That Canadians embrace diversity is especially evident in the way we respond to questions of language. Like many other countries in the world, Canada supports two languages officially but also supports many heritage languages through an array of publicly funded venues. The study of language, second-language learning, and bilingualism in particular are areas of research in which Canadians are at the forefront.

Throughout the text, we present issues like these that are important to Canadians. The fifth edition has been thoroughly updated and revised to reflect the ever-changing field of developmental psychology as well as to provide updated information on current Canadian research.

As noted at the outset, one the largest changes between previous editions and the present text is the focus. The present text focuses on child development, whereas earlier editions targeted both childhood and adolescence. Although some developmental theories and findings relate to both groups, a growing body of research indicates unique developmental issues in these two stages of development. As a result, whole courses are now offered for each of child and adolescent development. Thus, the present text focuses on child development with some material extending into early adolescence, as the division between childhood and adolescence is not so clear-cut in all domains or for every individual. Some changes that cut across all chapters include

- organization of material, with material being condensed, relocated, and presented in forms that allow easier comprehension of the main ideas;
- updates to existing research programs in the introduction of new research programs and studies in the text and highlighted in The Inside Track boxes to summarize current research being conducted by prominent Canadian developmentalists;
- the use of specific examples to highlight research findings and provide applications to real-life situations; and
- significant and thorough updates to the research and theory to reflect current thinking in developmental psychology.

In addition to these general changes that affect all chapters, numerous specific changes have been made in each chapter. The following provides some examples to demonstrate particular changes within each chapter.

Chapter 1: Introduction to Developmental Psychology and Its Research Strategies

- Added and updated discussions, materials, and research on the following topics:
 - baby diaries (added information about Clara and William Stern)
 - psychophysiological methods (added eye tracking)
 - ethical standards for conducting research (Tri-Council policies)
 - different notions of developmental stability (absolute and positional stability)
- Streamlined content to make it more accessible by deleting non-essential content and by reorganizing subsections to improve flow.

Chapter 2: Theories of Human Development

- Updated information regarding theories and theorists and augmented these updates with photos.
- Updated information on sociocultural theories.
- Introduced and discussed developmental systems view and Gottlieb’s model of co-active developmental systems.

Chapter 3: Hereditary Influences on Development

- To ensure clarity for students, the information on heritability was removed from the Current Controversies box and embedded in the text.
- Added paragraph in Developmental Issues box explaining the concept that “recessive” doesn’t mean “rare” and “dominant” doesn’t mean “ordinary.”
- Reduced section on hereditary disorders.
- Expanded recent advances in epigenetics and other ways genes are changed.

Chapter 4: Prenatal Development

- Introduced current research on prenatal exposure to HIV, including the importance of differentiating experiences in developed versus developing countries.
- Updated prevalence statistics throughout.
- Updated section on prenatal exposure to alcohol, including our current understanding of FASD.
- Updated section on illicit drugs and highlighted the impact of opioids as well as including a summary of the effects of cocaine.

Chapter 5: Birth and the Newborn’s Readiness for Life

- New The Inside Track box to highlight infant–parent mirroring.
- Revised birthing environments section to capture diversity of choices.
- Updated information related to postpartum stresses and depression.
- Updated statistics on sudden infant death syndrome in Canada.

Chapter 6: Physical Development: The Brain, Body, Motor Skills, and the Beginnings of Sexual Development

- Updated research on physical and motor changes.
- New Applying Research to Your Life box to explain the importance of physical activity for children.
- Revised discussion of sexual development to focus on early onset of puberty in childhood.

Chapter 7: Early Cognitive Foundations: Sensation, Perception, and Learning

- Revised section on research methods to include brain imaging techniques.
- Updated statistics on otitis media and its impact on language, cognition, and social development of children with recurring infections.

- Added information on the cues newborns use to recognize faces and how pain is experienced by newborns.
- Revised section on the development of depth perception regarding why infants avoid the drop-off in the visual cliff experiment.
- Updated statistics on corporal punishment of children and highlighting of its impact on children's aggression even in cultures that accept the practice.

Chapter 8: Cognitive Development: Piaget's Theory, Case's Neo-Piagetian Theory, and Vygotsky's Sociocultural Viewpoint

- Revised opening vignette to reflect a childhood example.
- Added information on *physical reasoning system* and *explanation-based learning*.
- New The Inside Track box featuring the research of Kang Lee.

Chapter 9: Cognitive Development: Information-Processing Perspectives and Connectionism

- Rearranged sections to make the flow among theories smoother.
- Streamlined and updated section on mathematics to make this application seamlessly follow the theory.
- Expanded and elaborated material related to metacognition.
- Updated research and examples.
- New The Inside Track box on preschoolers' reasoning.
- New The Inside Track box on mindfulness and academic success.

Chapter 10: Intelligence: Measuring Mental Performance

- Revised and updated opening vignette.
- Added PASS theory of intelligence.
- Updated statistics.
- Revised and updated The Inside Track box on David Saklofske's work to reflect a new focus on emotional intelligence.
- Updated information on adoptions and the role of genetics versus environment.
- Updated section on intellectual disabilities to reflect the DSM-5.

Chapter 11: Development of Language and Communication Skills

- Revised section on the optimal age of linguistic exposure to attain native proficiency in second language learning by examining international adopted children.
- Introduced statistical learning in early speech perception and word learning.
- New Canadian statistics on immigrants and languages used.
- New The Inside Track box on Johanne Paradis's work on syntax and morphology in second-language learners.

Chapter 12: Emotional Development, Temperament, and Attachment

- Reorganized and streamlined discussion on attachment.
- Reorganized and streamlined discussion on emotions.
- Expanded discussion on temperament.
- Two new The Inside Track boxes highlighting the work of Ellen Moss and Elizabeth Hayden.
- Expanded and updated references throughout the chapter.

Chapter 13: Development of the Self and Social Cognition

- Revised discussion of identity.
- Expanded discussion of cultural differences in self-concept.
- Expanded discussion of self-esteem.
- Expanded and updated discussion of achievement motivation.
- Expanded and updated references.
- Two new The Inside Track boxes highlighting the work of Shelley Hymel and Joanne Cummings.

Chapter 14: Sex Differences and Similarities, and Gender-Role Development

- Expanded discussion of evolutionary theory.
- Updated Focus on Research box dealing with the Bruce/Brenda story.
- Expanded discussion of marketing and media influence on observational learning of gender roles.
- Updated discussion of gender schema theory.
- Expanded and updated references throughout.

Chapter 15: Moral Development and Aggression

- Chapter restructured and sections on moral development and prosocial development merged to reduce redundancy.
- Section on definition of *moral domain* expanded.
- Evolutionary perspectives introduced.
- Discussion of new research on infants' social preferences, helping behaviour, and lying.
- New The Inside Track box highlighting Tina Malti's research.
- Research on bullying removed to reduce overlap with other chapters and make content more pertinent for children's development.

Chapter 16: The Family

- Updated references and Canadian statistics throughout chapter.
- Updated The Inside Track boxes.
- New discussion of the so-called “tiger parenting” style.

- Updated statistics and discussion on child abuse and neglect including practices of immigrant families.
- Added information on “grooming.”

Chapter 17: Beyond the Family Context: Peers, Schools, and Media Technologies

- Clarified the different forms of social inhibition (e.g., shyness versus withdrawing).
- Added information about how culture, intergenerational support, and temperament affects children’s behaviour and school success.
- Added more recent school models.
- Significant changes in technology have resulted in a different landscape for children in today’s technological world. Conditions leading to change and the impact of screen media technologies are introduced and elaborated upon.
- Introduced intergenerational contributions to schooling.
- Added information about how parents use technologies to monitor children’s behaviour.

■ Writing Style

Our goal has been to write a book that speaks directly to its readers and treats them as active participants in an ongoing discussion. We have tried to be relatively informal and down to earth in our writing style and to rely heavily on questions, thought problems, concept checks, and a number of other exercises to stimulate students’ interest and involvement. Most of the chapters were “pretested” on our own faculty and students, who identified parts that weren’t clear to them and suggested several of the concrete examples, analogies, and occasional anecdotes that we’ve used when introducing and explaining complex ideas. So, with the valuable assistance of our student and peer critics, we have attempted to prepare a text that is substantive and challenging yet reads more like a dialogue or a story than like an encyclopedia.

■ Special Features

Among the more important features that are included to encourage student interest and involvement and make the material easier to learn are the following:

- **Introductions and chapter summaries.** A brief introductory section at the beginning of each chapter provides the student with a preview of what will be covered.
- **Concept Checks** located at strategic points within each chapter give students opportunities to review as they progress through the chapter. Concept Checks include multiple-choice, fill-in-the-blank, essay, and scenario-based questions. Answers to all Concept Checks can be found at the end of each chapter.
- **Summary** sections at the end of each chapter present bulleted statements organized by major chapter section, summarizing the key points of each section.
- **Running glossary, key term lists, and comprehensive end-of-book glossary.** A running glossary provides on-the-spot definitions of boldface key terms as they appear in the text. At the end of each chapter is a list of key terms that appeared in the narrative, as well as the page number on which each term is

defined. A complete glossary of key terms for the entire text appears at the end of the book. The number of the page where each term is first introduced is included in the glossary.

- **Boxes.** Each chapter contains boxes that highlight important research, ideas, processes, issues, or applications. The aim of these boxes is to permit a closer or more personal examination of selected topics while stimulating the reader to think about the questions, controversies, practices, and policies under discussion. For example, **The Inside Track** boxes highlight current Canadian research and researchers; **Applying Research to Your Life** gives students useful tools for becoming wise consumers of the research; **Focus on Research** boxes discuss classic and recent studies that illuminate the topics and issues of development; and **Applying Developmental Themes** sections highlight the book's four core developmental themes (nature/nurture, active/passive, continuity/discontinuity, and the holistic nature of development), showing students how chapter topics apply to these themes. **Developmental Issues** boxes highlight applied questions important to development. All of these boxes are carefully woven into the chapter narrative and were selected to reinforce central themes in the text.
- **The Inside Track boxes.** An exciting feature of this text is The Inside Track. These boxes highlight one or two recent studies or a program of research conducted by researchers at Canadian universities. In writing these features, we had the opportunity to communicate directly with almost all of the researchers represented. You will notice that the research captures the state-of-the-art work being conducted by Canadian researchers. Together, The Inside Track boxes identify the extraordinary array of research being conducted at Canadian universities. Although we have added new researchers in this edition, these boxes feature only a few of the many individuals whose work is making an impact on our understanding of Developmental Issues. We would have liked to include many others but were limited, in some cases, by space restrictions and, in others, by the advanced level of research, which was beyond the scope of an introductory textbook. We have, however, integrated other important Canadian contributions throughout the body of the text. In many cases, university affiliations are provided with the researchers' names to let students know where the researcher is located. Where affiliations are left out, we felt they impeded the flow of the text or compromised the clarity of the presentation. Overall, students will have an opportunity to become acquainted with Canadian research and gain a better understanding of how it fits within the big picture in developmental psychology. In this fifth edition, we added new The Inside Track boxes, as well as revising and updating the existing ones.
- **Illustrations.** Photographs, tables, figures, and chronological tables are used extensively to review important developmental ideas and milestones. All visual aids, including the occasional cartoon, were selected to illustrate important principles and concepts and thereby enhance the educational goals of the text.
- **Critical-thinking questions.** The **What Do You Think?** feature is designed to encourage students to think about current controversies and/or to apply what they have learned in formulating their own reasoned position on developmentally significant issues. Any and all of these questions may serve as excellent springboards for class discussion.

Supplementary Aids and Ancillaries



Instructor Resources

The **Nelson Education Teaching Advantage (NETA)** program delivers research-based instructor resources that promote student engagement and higher-order thinking to enable the success of Canadian students and educators. Visit Nelson Education's **Inspired Instruction** website at www.nelson.com/inspired/ to find out more about NETA.

The following instructor resources have been created for *Developmental Psychology: Infancy and Childhood*, Fifth Canadian Edition. Access these ultimate tools for customizing lectures and presentations at www.nelson.com/instructor.

NETA Test Bank

This resource was updated for this edition by Nancy Ogden of Mount Royal University. It includes over 100 multiple-choice questions written according to NETA guidelines for effective construction and development of higher-order questions. Also included is a range of short-answer and essay questions for each chapter.

The NETA Test Bank is available in a new, cloud-based platform. **Nelson Testing Powered by Cognero®** is a secure online testing system that allows instructors to author, edit, and manage test bank content from anywhere Internet access is available. No special installations or downloads are needed, and the desktop-inspired interface, with its drop-down menus and familiar, intuitive tools, allows instructors to create and manage tests with ease. Multiple test versions can be created in an instant, and content can be imported or exported into other systems. Tests can be delivered from a learning management system, the classroom, or wherever an instructor chooses. Nelson Testing Powered by Cognero for *Developmental Psychology: Infancy and Childhood*, Fifth Canadian Edition, can be accessed through www.nelson.com/instructor.

NETA PowerPoint

Microsoft® PowerPoint® lecture slides for every chapter have been updated for this edition by Nancy Ogden of Mount Royal University. There is an average of 30 slides per chapter, many featuring key figures, tables, and photographs from *Developmental Psychology: Infancy and Childhood*, Fifth Canadian Edition. NETA principles of clear design and engaging content have been incorporated throughout, making it simple for instructors to customize the deck for their courses.

Image Library

This resource consists of digital copies of figures, short tables, and photographs used in the book. Instructors may use these jpegs to customize the NETA PowerPoint or create their own PowerPoint presentations. An image library key describes the images and lists the codes under which the jpegs are saved. Codes normally reflect the chapter number (e.g., C01 for Chapter 1), the figure or photo number (e.g., F15 for Figure 15), and the page in the textbook. C01-F15-pg26 corresponds to Figure 1-15 on page 26.

MindTap

Offering personalized paths of dynamic assignments and applications, **MindTap** is a digital learning solution that turns cookie-cutter into cutting-edge, apathy into engagement, and memorizers into higher-level thinkers. MindTap enables students to analyze and apply chapter concepts within relevant assignments and allows instructors to measure skills and promote better outcomes with ease. A fully online learning solution,



MindTap combines all student learning tools—readings, multimedia, activities, and assessments—into a single Learning Path that guides the student through the curriculum. Instructors personalize the experience by customizing the presentation of these learning tools to their students, even seamlessly introducing their own content into the Learning Path. Questions in the MindTap have been revised for this edition by Nancy Ogden of Mount Royal University.



Student Ancillaries

MindTap

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- Flashcards are pre-populated to provide you with a jump start for review—or you can create your own.
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Acknowledgments

As is always the case with projects as large as this one, there are many, many individuals whose assistance was invaluable in the planning and production of the book. We would like to acknowledge several researchers who helped to ensure the most up-to-date material and understandings in the literature were present in this text. First, the updates to the Principles of Hereditary Transmission section were greatly dependent on the eye-opening and patient explanations from Dr. Sash Damjanovski from Western University, London, Ontario. The research regarding early screen media relied heavily on research conducted as part of the dissertations of two newly graduated doctoral students from Wilfrid Laurier University, Dr. Domenica De Pasquale and Dr. Karin Archer. Dr. Marc Joannisse of the University of Western Ontario deserves a special note of thanks for his assistance in constructing the section on connectionism in Chapter 9.

Second, we would like to acknowledge the tremendous contributions of each Canadian researcher highlighted in this text. Many not only shared their most important pieces of work and took the time to summarize or review our summaries to make sure information was accurate, but they also hunted down photographs so that we would be able to show you the person behind the research.

Third, the quality of any volume in human development depends to a large extent on the quality of the prepublication reviews from developmentalists around the world. Many colleagues (including several dozen or so interested and unpaid volunteers) have influenced this book by contributing constructive criticism, useful suggestions, references, and a whole lot of encouragement. Each of those experts has helped to make the final product a better one, and we thank them all.

The reviewers of the first through fifth Canadian editions include Scott Adler, York University; Alisa Almas, University of Toronto; Tsasha Awong, Ryerson University; Lilly Both, University of New Brunswick, Saint John; Elizabeth Bowering, Mount Saint Vincent University; Anne Bowker, Carleton University; Mary Courage, Memorial University; Jason Daniels, University of Alberta; Amy De Jaeger, University of Manitoba;

Nancy Digdon, Grant MacEwan College; Helen Doan, York University; Margaret Forgie, University of Lethbridge; Deb Glebe, Wilfrid Laurier University; Darcy Hallet, University of British Columbia; Barbara Hodkin, Mount Saint Vincent University; Gretchen Hess, University of Alberta; Nina Howe, Concordia University; Jacqueline Kampman, Thompson Rivers University; Jane Ledingham, University of Ottawa; Elizabeth Levin, Laurentian University; Kathleen McKim-Dawes, University of New Brunswick; Mowei Liu, Trent University; Kim MacLean, St. Francis Xavier University; Sandra Martin-Chang, Mount Allison University; Laura Melnyk Gribble, University of Western Ontario; Colleen McQuarrie, University of Prince Edward Island; Gene Ouellette, Mount Allison University; Shelley Parlow, Carleton University; Alissa Pencer, Dalhousie University; Carole Peterson, Memorial University of Newfoundland; Michael Pratt, Wilfrid Laurier University; Marjorie Rabiau, McGill University; William Roberts, University College of the Cariboo; Bruce Ryan, University of Guelph; Louis Schmidt, McMaster University; Thomas Shultz, McGill University; Tanya Spencer, Lakehead University; Caroline Sullivan, University of Ottawa; Kara Thompson, St. Francis Xavier University; Connie Varnhagen, University of Alberta; Anthony Volk, Brock University; Tara Vongpaisal, MacEwan University; Sally Walters, Capilano University; Gillian Wark, Simon Fraser University; and Susan Weir, University of Regina. We would like to thank these reviewers for helping to guide many of the changes we made to our book.

Finally, many other people have contributed their professionalism and skills to the development and production of the fifth Canadian edition of this text. We are especially grateful to Lenore Taylor-Atkins, Publisher for this project; to Liisa Kelly, who served as Content Manager; to Imoinda Romain, Senior Production Project Manager; to John Montgomery, who designed the book's cover; to freelance copy editor Valerie Adams for her skill, efficiency, tenacity, and attention to detail in copy editing; to MPS Limited for proofreading and for page-formatting expertise; and to Claire Varley, Marketing Manager.



Introduction to Developmental Psychology and Its Research Strategies

Let's begin this book with a question. Why did you choose to enroll in a course on human development? For many of you majoring in psychology, family studies, elementary education, or nursing, this class is required. Expectant parents may take the course in order to learn more about babies and children. Occasionally, people choose the course seeking to answer specific questions about their own behaviour or that of a friend or family member. Whatever your reasons, at one time or another you have probably been curious about one or more aspects of human development. For example,

- What does the world smell, feel, sound and look like to newborn infants? How do they make any sense of their new surroundings?
- When do infants first recognize their mothers? their fathers? themselves (in a mirror)?
- Why do many 1-year-olds seem so attached to their mothers and wary of strangers?
- Foreign languages are difficult to follow if we merely listen to people conversing in them. Yet, infants and toddlers will acquire their native language without any formal instruction. How is this possible? Is language learning easier for children than for adults? Is a child in a bilingual home at a disadvantage?
- Why do you remember so little about the first two or three years of your life?
- Why are some people friendly and outgoing, while others are shy and reserved? How does the home environment influence an individual's personality?
- Why is it that all humans turn out similar in many ways and, at the same time, so different from one another?

Introduction to Developmental Psychology

The aim of this book is to seek answers for these and many other fascinating questions about developing persons by reviewing the theories, methods, discoveries, and many practical accomplishments of the modern developmental