

# CHILDREN AND THEIR DEVELOPMENT

Third Canadian Edition



Robert V. Kail • Anne M. C. Barnfield

# Children and Their Development

**Third Edition**

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**To Laura, Matt, and Ben**

**—Robert V. Kail**

**To my father and stepmother, Philip and  
Christine Barnfield—educators**

**—Anne M. C. Barnfield**

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# Preface

Like many professors-turned-textbook-authors, Robert Kail wrote this book because none of the texts available met the aims of the child-development classes that he taught. *Children and Their Development*, first published in 1998, was Kail's effort to meet those aims. This, the third Canadian edition, does so from a Canadian perspective. In the next few paragraphs, we want to describe those aims and how this book is designed to achieve them.

**Goal 1: Use effective pedagogy to promote students' learning.** The focus on a student-friendly book begins with the structure of the chapters. Each chapter consists of three or four modules that provide a clear and well-defined organization to the chapter. Each module begins with a set of learning objectives and a vignette that introduces the topic to be covered. Special topics that are set off in other textbooks as feature boxes are fully integrated with the main text and identified by a distinctive icon. Every feature ends with at least one critical thinking question to encourage students' engagement with the material presented. Each module ends with several questions intended to help students check their understanding of the major ideas in the module.

The end of each chapter includes several additional study aids. Unifying Themes links the ideas in the chapter to a major developmental theme. See for Yourself suggests activities that allow students to observe firsthand topics in child development. Resources includes books and websites where students can learn more about child development. Key Terms is a list of all of the important boldfaced terms appearing in the chapter. The Summary is a concise, one-page review of the chapter. The Test Yourself questions further confirm and cement students' understanding of the chapter material.

These different pedagogical elements *do* work; students using previous editions frequently comment that the book is easy to read and presents complex topics in an understandable way.

**Goal 2: Use fundamental developmental issues as a foundation for students' learning of research and theory in child development.** Child-development courses sometimes overwhelm students because of the sheer number of topics and studies. Of course, today's child-development science is really propelled by a concern with a handful of

fundamental developmental issues, such as the continuity of development and the roles of nature and nurture in development. In *Children and Their Development*, four of these foundational issues are introduced in Chapter 1, then reappear in subsequent chapters to scaffold students' understanding. As we mentioned already, the end of the chapter includes the Unifying Themes feature, in which the ideas from the chapter are used to illustrate one of the foundational themes. By reappearing throughout the text, the themes remind students of the core issues that drive child-development science.

**Goal 3: Teach students that child-development science draws on many complementary research methods, each of which contributes uniquely to scientific progress.** In Module 1.4, we portray child-development research as a dynamic process in which scientists make a series of decisions as they plan their work. In the process, they create a study that has both strengths and weaknesses. Each of the remaining chapters of the book contains a Focus on Research feature that illustrates this process by showing—in an easy-to-read, question-and-answer format—the different decisions that investigators made in designing a particular study. The results are shown, usually with an annotated figure, so that students can learn how to interpret graphs. The investigators' conclusions are described, and we then conclude each Focus on Research feature by mentioning the kind of converging evidence that would strengthen the authors' conclusions. Thus, the research methods introduced in Chapter 1 reappear in every chapter, depicting research as a collaborative enterprise that depends on the contributions of many scientists using different methods.

**Goal 4: Show students how findings from child-development research can improve children's lives.** Child-development scientists and students alike want to know how the findings of research can be used to promote children's development. In Chapter 1 of *Children and Their Development*, we describe the different means by which researchers can use their work to improve children's lives. In the chapters that follow, these ideas come alive in the Children's Lives feature, which provides examples of research-based solutions to common problems in children's lives. From these features, students realize

that child-development research really matters—that parents, teachers, and policymakers can use research to foster children’s development.

Why do you need this new edition? Here are six good reasons:

1. Brand new to this edition are Critical Thinking questions at the end of every feature within a chapter, and a test at the end of every chapter to help students assess their understanding of the material presented in the chapter.
2. Many of the Focus on Research, Cultural Influences, Spotlight on Theories, Children’s Lives, and Improving Children’s Lives features have been replaced and updated throughout the text, covering such topics as brain specialization for face processing, scientific reasoning, autism, intelligence, children’s testimony, and school phobia/school refusal behaviour.
3. New cutting-edge research has been added, such as the impact of a pregnant woman’s cell-phone usage on prenatal development, the influence of emotions on moral development, the impact of motor skill development on perception, cross-cultural variations in attachment, the impact of the exposure to a culture of violence on the development of aggression, and the role of multiple cascading risks in the development of aggression.
4. Also expanded and updated are the topics of fetal alcohol spectrum disorder, theory of mind, children’s testimony, learning disabilities, the impact of video on children’s language learning, consequences of attachment quality, the influences on identity formation, adolescent storm and stress, and self-esteem. As well, new material has been included on cultural differences in self esteem, the benefits of grandparent-grandchild relationships, and programs for the prevention of child maltreatment.
5. Entire sections have been reorganized. The greatest change has been a reorganization of information from the second edition Chapter 15, with movement of some information to other chapters and an amalgamation of the remaining information with Chapter 14 to form a single chapter covering Social Influences. Other chapter-level reorganizations have been made, including the section on Paths from Genes to Behaviour (which now includes expanded coverage of epigenesis) and the sections on brain specialization and children with intellectual disability (formerly mental retardation), which reflects the changes to terminology implemented by the American Association on Intellectual and Developmental

Disabilities and organizations such as the Canadian Association for Research and Education in Intellectual Disabilities (CARD-ID) and the Canadian Association for Community Living (CACL).

6. MyPsychLab has been updated and now includes a more robust study plan organized and structured around Bloom’s taxonomy, and new videos have been added along with a complete eText that students can access anytime, anywhere—even offline with an iPad.

## New to the Third Canadian Edition

The third Canadian edition of *Children and Their Development* has several improvements designed to make the book more useful to students and instructors in Canada. As mentioned above, a Canadian perspective has been taken throughout, and work by Canadian researchers highlighted. More international research and information is also included. In updating the coverage of research, we have added hundreds of new citations to research published since 2000. We have also added significant new content to every chapter. Of particular note:

**Chapter 1** now includes information on Bronfenbrenner’s Ecological Systems theory, moved from the end chapters to this chapter’s section on the Contextual Perspective to be part of the discussion on the foundational theories in child development.

**Chapter 2** includes a reorganized section on Paths from Genes to Behaviour, with expanded coverage of epigenesis.

**Chapter 3** has additional information on sensory experiences of the fetus, expanded coverage of fetal alcohol spectrum disorder, and new material on the impact of cell-phone usage on prenatal development.

**Chapter 4** has a much-reorganized section on brain development, including a new Focus on Research feature, with updates and improved explanations of brain specialization, especially of experience-dependent and experience-expectant growth.

**Chapter 5** has a new section on the impact of motor-skill development on perception.

**Chapter 6** has been reorganized, its content on theory of mind updated, and it now includes a new Children’s Lives feature devoted to autism.



**Chapter 7** now has information on electronic media (TV, video games, computers), moved here from later chapters, as well as a revised section on children’s eyewitness testimony and updated information on word and number recognition.

**Chapter 8** contains an updated Spotlight on Theory feature on intelligence; a completely rewritten section on children with intellectual disability, with updated terminology and information; and significantly revised coverage of learning disabilities.

**Chapter 9** updates information on infant language learning and describes work on the impact of video on children’s language learning, including a new Focus on Research feature on the influence of “baby media.”

**Chapter 10** has new material on the origins of disgust, a completely revised section on school phobia (now called school refusal behaviour), and much-revised coverage on the consequences of attachment quality.

**Chapter 11** has been substantially re-organized and updated, including revised and expanded coverage of influences on identity formation, adolescent storm and stress, and self-esteem, as well as new material on the cultural differences in self-esteem.

**Chapter 12** has a new Cultural Influences feature, new material on the influences of emotions on moral development, coverage of the role of a culture of violence on the development of aggression, new material on the role of multiple cascading risks in the development of aggression, and updates on cyberbullying and ridicule as a form of bullying.

**Chapter 13** includes completely revised coverage of gender-related differences in math (with a new Cultural Influences feature), and an updated Spotlight on Theories feature.

**Chapter 14** is a reorganization of the second edition’s chapters 14 and 15, to give one, coherent chapter on Social Influences. This chapter also has new material on the effects of punishment and an alternative called “time in,” as well as revised information regarding family structure, including the role of grandparents, and updates on peer relationships and programs designed to prevent child maltreatment.

## Support Materials

*Children and Their Development*, Third Canadian Edition, is accompanied by a superb set of ancillary materials. They include the following:

## MEDIA SUPPLEMENTS

### MyPsychLab

**MyPsychLab.** MyPsychLab combines proven learning applications with powerful assessment to engage students, assess their learning, and help them succeed. With assessment tied to every video, application, and chapter, students receive immediate feedback and instructors can see what their students know with just a few clicks. Instructors can personalize MyPsychLab to meet the needs of their students.

MyPsychLab includes:

- **MyVirtualChild.** MyVirtualChild is an interactive simulation that allows students to play the role of parent and raise their own virtual child. By making decisions about specific scenarios, students can raise their child from birth to age 18 and learn firsthand how their own decisions and other parenting actions affect their children over time.
- An individualized **study plan** for each student, based on performance results from chapter pre-tests, helps students focus on the specific topics where they need the most support. The personalized study plan arranges content from less complex thinking (like remembering and understanding) to more complex critical thinking skill (like applying and analyzing) and is based on Bloom’s Taxonomy. Every level of the study plan provides a formative assessment quiz
- The **MyPsychLab Video Series for Developmental Psychology** engages students in the study of human development. Hundreds of observational videos and interviews from prenatal development through to the end of the lifespan bring to life a wide range of topics typically covered in child, adolescent, and lifespan development courses. New cross-cultural videos shot on location in several countries allow students to observe similarities and differences in human development across cultures throughout the lifespan. These videos can be accessed online via MyPsychLab and are also available on DVD.
- The **Pearson eText** lets students access their textbook anytime, anywhere, and any way they want—including on an iPad.

- **Media Assignments** for each chapter (including videos with assignable questions) feed directly into the gradebook, enabling instructors to track student progress automatically.

## INSTRUCTOR SUPPLEMENTS



**MyTest:** Pearson MyTest is a powerful assessment-generation program that helps instructors easily create and print quizzes, tests, exams, as well as homework or practice handouts. Questions and tests can all be authored online, allowing instructors ultimate flexibility and the ability to efficiently manage assessments at any time, from anywhere. MyTest for *Children and Their Development* contains over 2000 multiple-choice, true/false, and short-answer essay questions, which are also available in Microsoft Word format (see below). MyTest can be accessed through MyPsychLab as well.

The following supplements can be downloaded from a password-protected section of Pearson Education Canada's online catalogue ([www.pearsoncanada.ca/highered](http://www.pearsoncanada.ca/highered)). Navigate to your book's catalogue page to view a list of those supplements that are available. See your local sales representative for details and access.

**Instructor's Resource Manual:** Each chapter in the manual includes the following resources: Chapter Learning Objectives; Lecture Suggestions and Discussion Topics; Classroom Activities, Demonstrations, and Exercises; Out-of-Class Assignments and Projects; Lecture Notes; Multimedia Resources; Video Resources; and Handouts. Designed to make your lectures more effective and to save you preparation time, this extensive resource gathers together the most effective activities and strategies for teaching your developmental psychology course. The Instructor's Manual is in PDF format.

**PowerPoint Presentations:** Each chapter's PowerPoint presentation highlights the key points covered in the text.

**Image Library:** This set of images, illustrations, figures, and charts from the text is provided in electronic format for instructor use.

**Test Item File:** The test bank in Microsoft Word format contains over 2000 multiple-choice, true/false, and short-answer essay questions. The test bank is also available in MyTest format (see above).

**ClassPrep:** This new offering from Pearson makes lecture preparation simpler and less time-consuming! Pearson has collected the very "best of" instructor resources,

including art and figures from our leading texts, videos, lecture activities, classroom activities, demonstrations, and much more. Instructors are able to search through this extensive database by content topic (arranged by standard topics within the introductory psychology curriculum) or by content type (video, audio, simulation, Word documents). ClassPrep allows instructors to select resources appropriate for lecture, many of which can be downloaded directly. Or instructors can build their own folder of resources and present from within the ClassPrep program. ClassPrep can also be accessed through MyPsychLab.

**CourseSmart:** CourseSmart goes beyond traditional expectations—providing instant online access to the textbooks and course materials you need at a lower cost for students. And even as students save money, you can save time and hassle with a digital eTextbook that allows you to search for the most relevant content at the very moment you need it. Whether it's evaluating textbooks or creating lecture notes to help students with difficult concepts, CourseSmart can make life a little easier. See how when you visit [www.coursesmart.com/instructors](http://www.coursesmart.com/instructors).

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## To the Student

In this book, we'll trace children's development from conception through adolescence. Given this goal, you may expect to find chapters devoted to early childhood, middle childhood, and the like. But this book is organized differently—around topics. Chapters 2 through 5

are devoted to the genetic and biological bases of human development, and the growth of perceptual and motor skills. Chapters 6 through 9 cover intellectual development—how children learn, think, reason, and solve problems. Chapters 10 through 14 concern social and emotional development—how children acquire the customs of their society and learn to play the social roles expected of them.

This organization reflects the fact that when scientists conduct research on children’s development, they usually study how some specific aspect of how a child develops. For example, a researcher might study how memory changes as children grow or how friendship in childhood differs from that in adolescence. Thus, the organization of this book reflects the way researchers actually study child development.

## ORGANIZATION OF CHAPTERS AND LEARNING AIDS

Each of the chapters (except Chapter 1) includes several modules that are listed at the beginning of each chapter. Each module begins with a set of learning objectives phrased as questions, a mini-outline listing the major subheadings of the module, and a brief vignette that introduces the topics to be covered in the module. The learning objectives, mini-outline, and vignette tell you what to expect in the module.

5.1

**Basic Sensory and Perceptual Processes**

**OUTLINE**

Smell, Taste, and Touch

Hearing

Seeing


Integrating Sensory Information


**LEARNING OBJECTIVES**


- Are newborn babies able to smell and taste? Do they respond to touch and experience pain?
- How well do infants hear? How do they use sounds to understand their world?
- How accurate is infants’ vision? Do infants perceive colour?
- How do infants integrate information from different senses?


*Darla adores her three-day-old daughter, Olivia. She loves holding her, talking to her, and simply watching her. Darla is certain that Olivia is already getting to know her, coming to recognize her face and the sound of her voice. Darla’s husband, Steve, thinks she is crazy. He tells her, “Everyone knows that babies are born blind. And they probably can’t hear much either.” Darla doubts that Steve is right, but she wishes someone would tell her about babies’ vision and hearing.*

Each module in Chapters 2 through 14 includes at least one special feature that expands or highlights a topic. There are four different kinds of features; you can recognize each one by its distinctive icon:

 Focus on Research provides details on the design and methods used in a particular research study. Closely examining specific studies demystifies research and shows that scientific work is a series of logical steps conducted by real people.

 Cultural Influences shows how culture influences children and illustrates that developmental journeys are diverse. All children share the biological aspects of development, but their cultural contexts differ. This feature celebrates the developmental experiences of children from different backgrounds.

 Children’s Lives shows how research and theory can be applied to improve children’s development. These practical solutions to everyday problems show the relevance of research and theory to real life, and show how results from research are used to create social policy that is designed to improve the lives of children and their families.

 Spotlight on Theories examines an influential theory of development and shows how it has been tested in research.

Two other elements are designed to help you focus on the main points of the text. First, whenever a key term is introduced in the text, it appears in *Blue bold italic* like this and the definition appears in **black boldface type**. This format should make key terms easier for you to find and learn. Second, summary tables appear periodically throughout the book, reviewing key ideas and providing a capsule account of each. For example, the following Summary Table shows the many study aids that we’ve included in the book.

SUMMARY TABLE	
STUDY AIDS USED IN CHILDREN AND THEIR DEVELOPMENT, THIRD CANADIAN EDITION	
Study Aid	Key Features
Module-opening material	Learning objectives, vignette, mini-outline
Special features	Focus on Research, Children’s Lives, Cultural Influences, Spotlight on Theories, each with Critical Thinking questions
Design elements that promote learning	Boldface key terms defined in text, summary tables (like this one)
Check Your Learning	Recall, interpret, and apply questions
End-of-chapter material	Unifying Themes, See for Yourself, Resources, Key Terms, Summary, Self-test

Each module concludes with Check Your Learning questions to help you review the major ideas in that module. As you can see in the inset, there are three kinds of questions: recall, interpret, and apply.



### Check Your Learning

**RECALL** List the major parts of a nerve cell and the major regions of the cerebral cortex.

Describe evidence that shows the brain's plasticity.

**INTERPRET** Compare growth of the brain before birth with growth of the brain after birth.

**APPLY** How does the development of the brain, as described in this module, compare to the general pattern of physical growth described in Module 4.1?

If you can answer the questions in Check Your Learning correctly, you are on your way to mastering the material in the module. However, do not rely exclusively on Check Your Learning as you study for exams. The questions are designed to give you a quick check of your understanding, not a comprehensive assessment of your knowledge of the entire module.

At the very end of each chapter are several additional study aids. Unifying Themes links the contents of the chapter to the developmental themes that we introduce in Module 1.3. The feature, See for Yourself, suggests some simple activities for exploring issues in child development on your own. Resources includes books and websites where you can learn more about children and their development. Key Terms is a list of all the important terms that appear in the chapter, along with the page where each term is defined. The Summary provides a concise review of the entire chapter, organized by module and the primary headings within the module. Finally, the Test Yourself questions further confirm and cement your understanding of the chapter material.

## INTEGRATION OF MyPsychLab

MyPsychLab is a dynamic, interactive online resource that gives you access to a variety of valuable media resources—all in one easy-to-use website. Several features have been added to this text to help you take advantage of those resources:

**MyPsychLab**

Visit [www.mydevelopmentlab.com](http://www.mydevelopmentlab.com) to help you get the best grade!  
Test your knowledge and grasp difficult concepts through:


- Custom study plans: See where you are strong and where you went wrong
- Interactive simulations
- Video and audio clips
- Raise your own Virtual Child —and much more!

Throughout the chapters in the text, you'll find descriptions of MyPsychLab video clips. These descriptions appear in the margin beside topics that are further explored in the video clips.

Several icons also appear throughout the margins to direct you to interactive study resources on MyPsychLab that illustrate key concepts discussed in the text:

 **Watch** directs you to videos.

 **Explore** directs you to animations.

 **Simulate** directs you to simulations.

Finally, a MyPsychLab banner has been placed at the end of every chapter to remind you to visit MyPsychLab to help you master the material you've just learned.

## TERMINOLOGY

Every field has its own terminology, and child development is no exception. We will be using several terms to refer to different periods of infancy, childhood, and adolescence. Although these terms are familiar, we will use each to refer to a specific range of ages:

Newborn	Birth to 1 month
Infant	1 month to 1 year
Toddler	1 to 2 years
Preschooler	2 to 6 years
School-age child	6 to 12 years
Adolescent	12 to 18 years
Adult	18 years and older

Sometimes for the sake of variety we will use other terms that are less tied to specific ages, such as *babies*, *youngsters*, and *elementary-school children*. When we do, you will be able to tell from the context what groups are being described.

We will also use very specific terminology in describing research findings from different cultural and ethnic groups. The appropriate terms to describe different cultural, racial, and ethnic groups change over time. For example, the terms *coloured people*, *Negroes*, *Black Canadians*, and *African Canadians* have all been used to describe Canadians who trace their ancestry to Africa. In this book, we will use the term *African Canadian* because it emphasizes the unique cultural heritage of this group of people. Following this same line of reasoning, we will use the terms *European Canadian* (instead of *Caucasian* or *white*), *First Nations* or *Aboriginal* (instead of *Indian* or *American Indian*), *Asian Canadian*, and *Hispanic Canadian*.

These labels are not perfect. Sometimes they blur distinctions within ethnic groups. For example, the term *Hispanic Canadian* ignores differences between individuals who came to Canada from Puerto Rico, Mexico, and Guatemala; the term *Asian Canadian* blurs variations

among people whose heritage is East Indian, Japanese, Chinese, or Korean. Whenever researchers identified the subgroups in their research sample, we will use the more specific terms in describing results. When you see the more general terms, remember that conclusions may not apply to all subgroups within the group.

## COURSESMART FOR STUDENTS

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## A Final Word

Robert Kail wrote the first American edition of this book to make child development come alive for his students at Purdue. Although we can't teach you directly, we hope this book sparks your interest in children and their development. Please let us know what you like and dislike about the book so that it can be improved in later editions. You can email me, Anne Barnfield, at [abarnfie@uwo.ca](mailto:abarnfie@uwo.ca)—I'd love to hear from you.

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—Robert V. Kail

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—Anne M. C. Barnfield

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# 1

## The Science of Child Development



Marzanna Syncerz/Fotolia.

1.1

Setting the Stage

1.2

Foundational  
Theories of Child  
Development

1.3

Themes in  
Child-Development  
Research

1.4

Doing  
Child-Development  
Research

Beginning as a microscopic cell, every person takes a fascinating journey designed to lead to adulthood. This trip is filled with remarkably interesting and challenging events. In this book, we'll trace this journey as we learn about the science of child development, a multidisciplinary study of all aspects of human growth from conception to young adulthood. As an adult, you've already lived the years that are at the heart of this book. We hope you enjoy reviewing your own developmental path from the perspective of child-development research and that this perspective leads you to new insights into the developmental forces that have made you the person you are today.

Chapter 1 sets the stage for our study of child development. We begin, in **Module 1.1**, by looking at philosophical foundations for child development and the events that led to the creation of child development as a new science. In **Module 1.2**, we examine theories that are central to the science of child development. In **Module 1.3**, we explore themes that guide much of the research in child development. Finally, in **Module 1.4**, we learn about the methods scientists use to study children and their development.



## Setting the Stage

### OUTLINE

**Historical Views of Children and Childhood**

**Origins of a New Science**

### LEARNING OBJECTIVES

1. What ideas did philosophers have about children and childhood?
2. How did the modern science of child development emerge?
3. How do child-development scientists use research findings to improve children's lives?

*Kendra loves her 12-month-old son, Joshua, but she is eager to return to her job as a loan officer at a local bank. Kendra knows a woman in her neighbourhood who has cared for some of her friends' children, and they all think she is wonderful. But deep down, Kendra wishes she knew more about whether this type of care is really best for Joshua. She also wishes that her neighbour's daycare centre had a "stamp of approval" from someone who knows how to evaluate such facilities.*

**K**endra's question about the best way to care for her infant son is just the most recent in a long line that she has had about Joshua since he was born. When Joshua was just a few days old, Kendra wondered if he could recognize her face and her voice. As her son grows, she'll continue to have questions: Why is he so shy at preschool? Should he take classes for gifted children or would he be better off in regular classes? What can she do to be sure that he doesn't use drugs?

These questions—and hundreds more like them—touch issues and concerns that parents such as Kendra confront regularly as they do their best to rear their children. And parents are not the only ones asking these questions. Many professionals who deal with children—teachers, healthcare providers, and social workers, for example—often wonder what is best for children's development. Does children's self-esteem affect their success in school? Should we believe young children when they claim they have been abused? As well, government officials must decide what programs and laws provide the greatest benefit for children and their families. How does welfare reform affect families? Are teenagers less likely to have sex when they participate in abstinence-only programs?



So many questions, and all of them important! Fortunately, the field of child development, which traces physical, mental, social, and emotional development from conception to maturity, provides answers to many of them. To begin, let's look at the origins of child development as a science.

## Historical Views of Children and Childhood

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For thousands of years, philosophers have speculated on the fundamental nature of childhood and the conditions that foster a child's well-being. The famous Greek philosophers Plato (428–347 BCE) and Aristotle (384–322 BCE) believed that schools and parents had responsibility for teaching children the self-control that would make them effective citizens. But both philosophers, particularly Aristotle, also worried that too much self-discipline would stifle children's initiative and individuality, making them unfit to be leaders.

Plato and Aristotle also had ideas about knowledge and how it is acquired. Plato believed that experience could not be the source of knowledge because human senses are too fallible. He argued instead that children are born with innate knowledge of many concrete objects (such as animals and people), as well as with knowledge of abstractions (such as courage, love, and goodness). In Plato's view, children's sensory experiences simply trigger knowledge that they've had since birth. The first time a child sees a dog, her innate knowledge allows her to recognize it as such; no learning is necessary.

In contrast, Aristotle denied the existence of innate knowledge, believing instead that knowledge is rooted in perceptual experience. Children acquire knowledge piece by piece, based on the information provided by their senses. Aristotle likened a child's mind to a tablet that is blank, ready for experience to do the writing.

These contrasting views resurfaced during the Age of Enlightenment. The English philosopher John Locke (1632–1704) asserted that the human infant is a *tabula rasa*, or “blank slate,” and claimed that experience molds the infant, child, adolescent, and adult into a unique individual. According to Locke, parents should instruct, reward, and discipline young children, gradually relaxing their authority as children grow. In our opening vignette, Locke would have advised Kendra that childcare experiences will undoubtedly affect Joshua's development (though Locke would not specify how).

A century after Locke made his assertions, his view was challenged by the French philosopher Jean-Jacques Rousseau (1712–1778), who believed that newborns are endowed with an innate sense of justice and morality that unfolds naturally as the child grows. During this unfolding, children move through the same developmental stages that we recognize today—infancy, childhood, and adolescence. Rather than emphasizing parental discipline, Rousseau argued that parents should be responsive, and he encouraged them to be receptive to their children's needs, as he explained in his book *Émile*, written in 1762. Rousseau would have downplayed the impact of childcare experiences per se on Joshua's development, insisting instead that the key would be having caregivers who are responsive to his needs.

Rousseau shared Plato's view that children begin their developmental journey well prepared with a stockpile of knowledge. Locke, like Aristotle two thousand years before, believed that children begin their journey lightly packed, picking up necessary knowledge along the way, through experience. These debates might have continued to be solely philosophical for millennia except for a landmark event: the emergence of child development as a science.

## Origins of a New Science

The push toward child development as a science came in part from the significant role played by children themselves during the momentous transformation of the working environment in England known as the Industrial Revolution, which began in the mid-18<sup>th</sup> century. For much of recorded history, as soon as children no longer needed constant care from adults—by about five to seven years of age—they were considered grown up and entered the world of work. Many children worked at home, in the fields, or were apprenticed to learn a trade. Beginning in the mid-1700s, England moved from a largely rural culture relying on agriculture to an urban-oriented society organized around factories, especially cotton textile mills. Children moved with their families to cities and worked long hours in factories and in mines under horrendous conditions and for little pay (Postman, 1982). Accidents were common, and many children were maimed or killed. In textile mills, for example, the youngest children often had the hazardous job of picking up loose cotton from beneath huge power looms while the machines were in operation.

Reformers, appalled at these conditions, worked hard to enact legislation that would limit child labour and put more children in schools. Much political debate took place throughout the 1800s—after all, factory owners were among the most powerful people in Britain, and they adamantly opposed efforts to limit access to plentiful cheap labour. But the reformers ultimately carried the day and, in the process, made the well-being of children a national concern.

Another major event that set the stage for the new science of child development was the publication of Charles Darwin's theory of evolution. Darwin (1859) argued that individuals within a species differ; some individuals are better adapted to a particular environment, making them more likely to survive and to pass along their characteristics to future generations. Some scientists of the day noted similarities between Darwin's description of evolutionary change within species and the age-related changes in human behaviour. **This prompted many scientists, including Darwin himself, to write what became known as *baby biographies*—detailed, systematic observations of individual children.** The observations in the biographies were often subjective, and conclusions were sometimes reached on the basis of minimal evidence. Nevertheless, the systematic and extensive records in baby biographies paved the way for objective, analytic research.

Taking the lead in this new science at the dawn of the 20th century was G. Stanley Hall (1844–1924), who generated theories of child development based on evolutionary theory and conducted studies to determine age trends in children's beliefs and feelings about a range of topics. Perhaps more importantly, Hall founded the first English-language scientific journal in which scientists could publish findings from child-development research. He also founded a child study institute at Clark University and was the first president of the American Psychological Association.

Meanwhile, in France, Alfred Binet (1857–1911) had begun to devise the first mental tests, which we'll examine in Module 8.2. In Austria, Sigmund Freud (1856–1939) startled the world with his suggestion that the experiences of early childhood seemed to account for patterns of behaviour in adulthood. And American John B. Watson (1878–1958), the founder of behaviourism, began to write and lecture on the importance of reward and punishment for childrearing practices. (You'll learn more about Freud's and Watson's contributions in Module 1.2.)

Psychological research in Canada also dates from the late 1800s, when psychology was studied in departments of philosophy, a usual occurrence at that time.



### QUESTION 1.1

Morgan is 18 months old. Her father believes she should have a very structured day, one that includes some physical activity, time spent reading and doing puzzles, and, finally, lots of reassuring hugs and kisses. Is Morgan's dad a believer in Rousseau's or Locke's view of childhood? (Answer is on page 7.)

.....

In 1920, the psychology department of the University of Toronto became the first to be independent of philosophy (Pols, 2002).

An important figure in the early study of psychology in Canada is James Mark Baldwin (1861–1934). Baldwin, an American and a graduate of Princeton, is known for his research at the University of Toronto where he was appointed to the department of philosophy in 1889. There he set up the first psychology laboratory in Canada, which began research in 1891 (Hoff, 1992). Baldwin felt that a theoretical basis for experimentation was important and seems to have felt that baby biographies stifled theory, being too focused on observation (Harris, 1985). He himself performed experimental research, for example, on infant handedness and tested proposals derived from his theories.

The Canadian Psychological Association (CPA) was founded in the late 1930s. The idea was initially proposed in 1938, during the American Association for the Advancement of Science (AAAS) meeting held in June of that year at the Château Laurier hotel in Ottawa. At that meeting, a group of Canadian psychologists met to discuss founding a specifically Canadian organization (Dzinas, 2000). Following this first meeting, a draft constitution was drawn up, and the CPA was founded in 1939 (Dzinas, 2000; Ferguson, 1992).

It was in 1933, however, that the emerging scientific forces in developmental psychology came together in a new interdisciplinary organization called the Society for Research in Child Development (SRCD). Its members included psychologists, physicians, educators, anthropologists, and biologists, all of whom were linked by a common interest in discovering the conditions that could promote children's welfare and foster their development (Parke, 2004). Since then, SRCD membership has grown to more than 5000 and is now the main professional organization for child-development researchers. It continues to promote multidisciplinary research and to encourage the application of research findings to improve children's lives.

Progress in developmental psychology was halted by World War II, when most child-development scientists in North America abandoned their research to assist the war effort (Sears, 1975)—for example, Canadian psychologists advised the Royal Air Force in England on training methods (English, 1992; Ferguson, 1992). Many female psychologists also became well known during this time, taking on leading roles in both military and non-military activities (Wright, 1992).

After the war, women became more prominent in the CPA, with some becoming directors on the governing board of the association (Wright, 1992). Psychology as a discipline grew and by the 1950s and 1960s developmental psychology was thriving, marking the beginning of the modern era of child-development research. Most of the research described in this book originated in work carried out during these years.

Child-development researchers have learned a great deal in the ensuing 50 years, and because of their success, a new branch of child-development research has emerged. **Applied developmental science uses developmental research to promote healthy development, particularly for vulnerable children and families** (Lerner, Fisher, & Giannino, 2006). Scientists with this research interest contribute to sound family policy in a number variety of ways (Shonkoff & Bales, 2011). Some ensure that the consideration of policy issues and options is based on factual knowledge derived from child-development research. For example, when government officials need to address problems affecting children, child-development experts provide useful information about children and their development (Fasig, 2002). Others contribute by serving as advocates for children. Working with child advocacy groups,

child-development researchers alert policymakers to children’s needs and argue for family policy that addresses those needs. Still other child-development experts evaluate the impact of government policies on children and families (e.g., the effectiveness of provincial regulation of Children’s Aid Societies). Finally, one of the best ways to sway policymakers is to create working programs. When researchers create a program that effectively combats problems affecting children or adolescents (e.g., sudden infant death syndrome or teenage pregnancy), this can become powerful ammunition for influencing policy (Huston, 2008).

Thus, from its origins more than 100 years ago, modern child-development science has become a mature discipline, generating a vast catalogue of knowledge from which exciting discoveries continue to emerge. Scientists actively use this knowledge to improve the lives of children, as we’ll see in the Children’s Lives features that appear throughout this book. The research that you’ll encounter throughout this book is rooted in a set of developmental theories that provide the foundation of modern child-development research. These theories are the focus of the next module.



**ANSWER 1.1**

His emphasis on structure suggests that he believes in the importance of children’s experiences, which is a basic concept in Locke’s view of childhood.



**Check Your Learning**

**RECALL** What two events set the stage for the creation of child-development science?

Who were the leaders in the new field of child development before the formation of the Society for Research in Child Development?

**INTERPRET** Explain the similarities between Rousseau’s and Plato’s views of child development; how did their views differ from those shared by Locke and Aristotle?

**APPLY** Suppose a child-development researcher is an expert on the impact of nutrition on children’s physical and emotional development. Describe several different ways in which the researcher might help inform public policy concerning children’s nutrition.

**1.2**

**Foundational Theories of Child Development**

**OUTLINE**

- The Biological Perspective
- The Psychodynamic Perspective
- The Learning Perspective
- The Cognitive-Developmental Perspective
- The Contextual Perspective

**LEARNING OBJECTIVES**

1. What are the major tenets of the biological perspective?
2. How do psychodynamic theories account for development?
3. What is the focus of learning theories?
4. How do cognitive-developmental theories explain changes in children’s thinking?
5. What are the main points of the contextual approach?

*Will has just graduated from high school, first in his class. For his mother, Betty, this is a time to reflect on Will’s past and ponder his future. Will has always been a happy, easygoing child—a joy to rear. And he has always been interested in learning. Betty wonders why he is so perpetually good-natured and so curious. If she knew the secret, she laughs, she could write a best-selling book and be a guest on daytime TV shows like Dr. Phil!*

Before you read on, stop for a moment and think about Betty's question. How would you explain Will's interest in learning, his good nature, and his curiosity? Perhaps Betty has been a fantastic mother, doing all the right things at just the right time. Perhaps, year after year, his teachers quickly recognized Will's curiosity and encouraged it. Or was it simply Will's destiny to be this way? Each of these explanations is a very simple theory; each tries to explain Will's curiosity and good nature. In child-development research, theories are much more complicated, but their purpose is the same: to explain behaviour and development. **In child development, a *theory* is an organized set of ideas that is designed to explain and make predictions about development.**

Theories lead to hypotheses that we can test in research; in the process, each hypothesis is confirmed or rejected. Think about the different explanations for Will's behaviour. Each one leads to a unique hypothesis. If, for example, teacher encouragement has caused Will to be curious, we hypothesize that he would no longer be curious if his teachers stop encouraging that curiosity. When the outcomes of research are as hypothesized, a theory gains support. When results run counter to the hypothesis, the theory is deemed incorrect and revised. Revised theories then provide the basis for new hypotheses, which lead to new research, and the cycle continues. With each step along the way, a theory comes closer to becoming a complete account. (We will discuss this again in Module 1.4, when we look at the scientific method and research in detail.) In the Spotlight on Theories features throughout this book we'll look at specific theories, the hypotheses derived from them, and the outcomes of the research that tests those hypotheses.

Over the history of child development as a science, many theories have guided research and thinking about children's development. The earliest developmental theories were useful in generating research, and findings from that research led child-development scientists to newer, improved, or different theories. In this module, we describe the earlier theories that provided the scientific foundation for modern ones, because the newer theories described later in this book are best understood in terms of their historical roots.

Some theories share assumptions and ideas about children and development. Grouped together, they form five major theoretical perspectives in child-development research: the biological, psychodynamic, learning, cognitive-developmental, and contextual perspectives. As you read about each perspective in the next few pages, think about how each one differs from the others in its view of development.

## The Biological Perspective

According to the biological perspective, intellectual and personality development, as well as physical and motor development, are rooted in biology. One of the first biological theories—maturational theory—was proposed by Arnold Gesell (1880–1961). **According to *maturational theory*, child development reflects a specific and prearranged scheme or plan within the body.** In Gesell's view, development is simply a natural unfolding of a biological plan; experience matters little. Like Jean-Jacques Rousseau 200 years before him, Gesell encouraged parents to let their children develop naturally. Without interference from adults, Gesell claimed, behaviours such as speech, play, and reasoning would emerge spontaneously according to a predetermined developmental timetable.

Maturational theory was eventually discarded because it had little to say about the impact of environment on children's development. However, other biological

theories give greater weight to experience. **Ethological theory** views development from an evolutionary perspective. In this theory, many behaviours are adaptive—they have survival value. For example, clinging, grasping, and crying are adaptive for infants because they elicit caregiving from adults. Ethological theorists assume that people inherit many of these adaptive behaviours.

So far, ethological theory seems like maturational theory, with a dash of evolution added. How does experience fit in? Ethologists believe that all animals are biologically programmed in such a way that some kinds of learning occur only at certain ages. **A critical period in development is the time when a specific type of learning can take place; before or after the critical period the same learning is difficult or even impossible.**

One of the best-known examples of a critical period comes from the work of Konrad Lorenz (1903–1989), an Austrian zoologist who noticed that newly hatched chicks followed their mother about. He theorized that chicks are biologically programmed to follow the first moving object they see after hatching—usually the mother. Following her was the first step in **imprinting**—creating an emotional bond with the mother. Lorenz tested his theory by showing that if he removed the mother immediately after the chicks hatched and replaced it with another moving object, the chicks would follow that object and treat it as “Mother.” As the photo shows, the replacement objects included Lorenz himself! The chick had to see the moving object within about a day of hatching, however, or it would not imprint on the moving object. In other words, the critical period for imprinting lasts about a day; when chicks experience the moving object outside of the critical period, imprinting does not take place. Even though the underlying mechanism is biological, experience is essential for triggering the programmed, adaptive behaviour.

Ethological theory and maturational theory both highlight the biological bases of child development. Biological theorists remind us that children’s behaviour is the product of a long evolutionary history. Consequently, a biological theorist would tell Betty that Will’s good nature and his outstanding academic record are both largely products of his biological endowment—his heredity.

## The Psychodynamic Perspective

**FREUD’S THEORIES.** The psychodynamic perspective is the oldest scientific perspective on child development, originating in the work of Sigmund Freud (1856–1939) in the late 19th and early 20th centuries. Freud was a physician who specialized in diseases of the nervous system. Many of his patients were adults whose disorders seemed to have no obvious biological causes. As Freud listened to his patients describe their problems and their lives, he became convinced that early experiences establish patterns that endure throughout a person’s life. **Using his patients’ case histories, Freud created the first psychodynamic theory, which holds that development is largely determined by how well people resolve certain conflicts at different ages.**

The role of conflict is evident in Freud’s descriptions of the three primary components of personality. **The id is a reservoir of primitive instincts and drives.** Present at birth, the id presses for immediate gratification of bodily needs and wants. A hungry baby crying illustrates the id in action.



Sigurgeir Sigurjonsson/Nordicphotos/Alamy.

Newly hatched chicks follow the first moving object that they see, treating it as “Mother,” even when it’s a human.



### QUESTION 1.2

Keunho and Young-shin are sisters who moved to Toronto from Korea when they were 15 and 10 years old, respectively. Although both of them have spoken English almost exclusively since their arrival in Canada, Keunho still speaks with a bit of an accent and occasionally makes grammatical errors; Young-shin’s English is flawless—she speaks like a native. How could you explain Young-shin’s greater skill in terms of a critical period? (Answer is on page 19.)



Theoretical Perspectives on Personality