SEVENTH EDITION

CHILD DEVELOPMENT

ROBERT S. FELDMAN

Child Development

Seventh Edition

Robert S. Feldman
University of Massachusetts Amherst

PEARSON

Boston Columbus Indianapolis New York San Francisco
Amsterdam Cape Town Dubai London Madrid Milan Munich Paris Montréal Toronto
Delhi Mexico City São Paulo Sydney Hong Kong Seoul Singapore Taipei Tokyo

Dedication

To my children and grandchildren

VP, Product Development: Dickson Musslewhite
Senior Acquisitions Editor: Amber Chow
Development Editor: Jennifer Stevenson
Editorial Assistant: Luke Robbins
Program Manager: Diane Szulecki
Program Team Lead: Amber Mackey
Project Manager: Sherry Lewis
Project Team Lead: Linda Behrens
VP Product Marketing, Business & Arts: Maggie Moylan Leen
Director of Field Marketing: Jonathan Cottrell
Senior Product Marketer: Lindsey Prudhomme Gill
Executive Field Marketer: Kate Stewart
Marketing Assistant, Field Marketing: Paige Patunas
Marketing Coordinator, Product Marketing: Jessica Warren
Senior Operations Specialist: Diane Peirano
Operations Manager: Mary Fischer
Associate Director of Design: Blair Brown
Design Lead: Maria Lange
Cover Illustrator: Sam Brewster
Digital Media Project Manager: Pamela Weldin
Full-Service Project Management/Composition: Revathi Viswanathan/Lumina Datamatics, Inc.
Cover and Text Printer/Binder: RRD Roanoke

Copyright © 2016, 2012, 2010 by Pearson Education, Inc. or its affiliates. All Rights Reserved. Printed in the United States of America. This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise. For information regarding permissions, request forms and the appropriate contacts within the Pearson Education Global Rights & Permissions department, please visit www.pearsoned.com/permissions/.

Acknowledgments of third party content appear on pages 512–516, which constitutes an extension of this copyright page.

PEARSON and ALWAYS LEARNING are exclusive trademarks in the U.S. and/or other countries owned by Pearson Education, Inc. or its affiliates.

Unless otherwise indicated herein, any third-party trademarks that may appear in this work are the property of their respective owners and any references to third-party trademarks, logos or other trade dress are for demonstrative or descriptive purposes only. Such references are not intended to imply any sponsorship, endorsement, authorization, or promotion of Pearson's products by the owners of such marks, or any relationship between the owner and Pearson Education, Inc. or its affiliates, authors, licensees or distributors.

Library of Congress Cataloging-in-Publication Data

Feldman, Robert S. (Robert Stephen)
Child development / Robert S. Feldman. — Seventh edition.
pages cm
Includes bibliographical references and index.
ISBN 978-0-13-385203-5—ISBN 0-13-385203-2
1. Child development. 2. Child psychology. 3. Adolescence. 4. Adolescent psychology. I. Title.
HQ767.9.F43 2016
305.231—dc23

2014043388

Student Edition: ISBN-13: 978-0-13-385203-5
ISBN-10: 0-13-385203-2
a la Carte: ISBN-13: 978-0-13-401194-3
ISBN-10: 0-13-401194-5

PEARSON

Contents

Preface ix
Acknowledgments xv
About the Author xvi

1 An Introduction to Child Development 1

Prologue: New Conceptions 2
Looking Ahead 2
An Orientation to Child Development 3
Characterizing Child Development: The Scope of the Field 4
Developmental Diversity: How Culture, Ethnicity, and Race Influence Development 6
Cohort Influences on Development: Developing with Others in a Social World 7
Review 8
Children: Past, Present, and Future 8
Early Views of Children 9
The 20th Century: Child Development as a Discipline 9
Today's Key Issues and Questions: Child Development's Underlying Themes 10
The Future of Child Development 12
From Research to Practice: Preventing Violence Toward Children 13
Becoming an Informed Consumer of Child Development: Assessing Information on Child Development 14
Review 14
The Case of . . . Too Many Choices 15
Epilogue • Looking Back • Key Terms and Concepts

2 Theoretical Perspectives and Research 17

Prologue: The Unasked Questions 18
Looking Ahead 18
Perspectives on Children 19
The Psychodynamic Perspective: Focusing on Internal Forces 19
The Behavioral Perspective: Focusing on Observable Behavior 22
The Cognitive Perspective: Examining the Roots of Understanding 24
The Contextual Perspective: Taking a Broad Approach to Development 27
Evolutionary Perspectives: Our Ancestors' Contributions to Behavior 29
Why "Which Perspective Is Right?" Is the Wrong Question 30
Review 31
The Scientific Method and Research 32
Theories and Hypotheses: Posing Developmental Questions and Choosing a Research Strategy 32
Correlational Studies 34
Experiments: Determining Cause and Effect 37
Developmental Diversity and Your Life: Choosing Research Participants Who Represent the Diversity of Children 40
Review 41
Research Strategies and Challenges 41
Theoretical and Applied Research: Complementary Approaches 41
From Research to Practice: Using Developmental Research To Improve Public Policy 42
Measuring Developmental Change 43
Are You an Informed Consumer of Child Development?: Critically Evaluating Developmental Research 45
Ethics and Research 45
Review 46
The Case of . . . A Study in Violence 46
Epilogue • Looking Back • Key Terms and Concepts

3 The Start of Life: Genetics and Prenatal Development 50

Prologue: A Bold Choice 51
Looking Ahead 51
Earliest Development 52
Genes and Chromosomes: The Code of Life 52
The Basics of Genetics: The Mixing and Matching of Traits 55
Transmission of Genetic Information 55
The Human Genome and Behavioral Genetics: Cracking the Genetic Code 57
Genetic Counseling: Predicting the Future From the Genes of the Present 60
Review 63
The Interaction of Heredity and Environment 63
The Role of the Environment in Determining the Expression of Genes: From Genotypes to Phenotypes 63
Studying Development: How Much Is Nature? How Much Is Nurture? 64
From Research to Practice: When Nurture Becomes Nature 65

The Role of Genetics on Physical Traits, Intelligence, and Personality 66
Developmental Diversity and Your Life: Cultural Differences in Physical Arousal: Might a Culture's Philosophical Outlook Be Determined by Genetics? 69
Psychological Disorders: The Role of Genetics and Environment 70
Can Genes Influence the Environment? 71
Review 71
Prenatal Growth and Change 72
The Stages of the Prenatal Period: The Onset of Development 72
Pregnancy Problems 75
The Prenatal Environment: Threats to Development 77
Are You an Informed Consumer of Development?: Optimizing the Prenatal Environment 81
Review 82
The Case of . . . The Genetic Roll of the Dice 82
Epilogue • Looking Back • Key Terms and Concepts

4 Birth and the Newborn Infant 86
Prologue: A Belated Gift 87
Looking Ahead 87
Birth 88
Labor: The Process of Birth Begins 88
Are You an Informed Consumer of Development?: Dealing with Labor 90
Birth: From Fetus to Neonate 90
From Research to Practice: To Screen or Not to Screen? 91
Approaches to Childbirth: Where Medicine and Attitudes Meet 93
Review 96
Birth Complications 96
Preterm and Postmature Babies 97
Cesarean Delivery: Intervening in the Birth Process 100
Infant Mortality and Stillbirth: The Tragedy of Premature Death 102
Developmental Diversity: Overcoming Racial and Cultural Differences in Infant Mortality 102
Postpartum Depression: Moving From the Heights of Joy to the Depths of Despair 104
Review 105
The Competent Newborn 105
Meeting the Demands of a New Environment 106
Early Learning Capabilities 107
Social Competence: Responding to Others 108
Review 110
The Case of . . . No Place Like Home? 110
Epilogue • Looking Back • Key Terms and Concepts
Putting It All Together 113

5 Physical Development in Infancy 115
Prologue: First Steps 116
Looking Ahead 116
Growth and Stability 117
Physical Growth: The Rapid Advances of Infancy 117
The Nervous System and Brain: The Foundations of Development 118
Integrating the Bodily Systems: The Life Cycles of Infancy 121
SIDS: The Unanticipated Killer 123
Review 124
Motor Development 124
Reflexes: Our Inborn Physical Skills 125
Motor Development in Infancy: Landmarks of Physical Achievement 126
Developmental Norms: Comparing the Individual to the Group 128
Developmental Diversity and Your Life: The Cultural Dimensions of Motor Development 129
Nutrition in Infancy: Fueling Motor Development 130
Review 133
The Development of the Senses 134
Visual Perception: Seeing the World 134
From Research to Practice: Beauty is in the Eye of the Infant 136
Auditory Perception: The World of Sound 136
Smell, Taste, and Feel 137
Multimodal Perception: Combining Individual Sensory Inputs 139
Are You an Informed Consumer of Child Development?: Exercising Your Infant's Body and Senses 139
Review 140
The Case of . . . One Step at a Time 140
Epilogue • Looking Back • Key Terms and Concepts

6 Cognitive Development in Infancy 143
Prologue: Baby-Talk 144
Looking Ahead 144
Piaget's Approach to Cognitive Development 145
Key Elements of Piaget's Theory 145
The Sensorimotor Period: Six Substages of Cognitive Development 146
Appraising Piaget: Support and Challenges 149
Review 151
Information-Processing Approaches to Cognitive Development 151
Encoding, Storage, and Retrieval: The Foundations of Information Processing 152
Memory During Infancy: They Must Remember This . . . 153

Individual Differences in Intelligence: Is One Infant Smarter Than Another? 155
Review 158
The Roots of Language 158
The Fundamentals of Language: From Sounds to Symbols 158
The Origins of Language Development 162
From Research to Practice: Infants Learn From Adults, not Videos 164
Speaking to Children: The Language of Infant-Directed Speech 164
Developmental Diversity and Your Life: Is Infant-Directed Speech Similar in All Cultures? 165
Are You an Informed Consumer of Development?: What can you do to Promote Infants' Cognitive Development? 166
Review 167
The Case of . . . The Unidentified Woggie 167
Epilogue • Looking Back • Key Terms and Concepts

7 Social and Personality Development in Infancy 170

Prologue: Hidden Gender 171
Looking Ahead 171
Developing the Roots of Sociability 172
Emotions in Infancy 172
The Development of Self: Do Infants Know Who They Are? 174
From Research to Practice: Are Infants Racist? 175
Social Referencing: Feeling What Others Feel 175
Theory of Mind: Infants' Perspectives on the Mental Lives of Others—and Themselves 176
Stranger Anxiety and Separation Anxiety 177
Review 178
Forming Relationships 178
Attachment: Forming Social Bonds 179
The Ainsworth Strange Situation and Patterns of Attachment 179
Producing Attachment: The Roles of the Mother and Father 181
Developmental Diversity and Your Life: Does Attachment Differ Across Cultures? 183
Infant Interactions: Developing a Working Relationship 184
Review 186
Differences Among Infants 186
Personality Development: The Characteristics That Make Infants Unique 186
Temperament: Stabilities in Infant Behavior 187
Gender: Why Do Boys Wear Blue and Girls Wear Pink? 189
Family Life in the 21st Century 191
How Does Infant Child Care Affect Later Development? 191
Are You an Informed Consumer of Development?: Choosing the Right Infant Care Provider 193
Review 193
The Case of . . . The Different Temperaments 194
Epilogue • Looking Back • Key Terms and Concepts
Putting It All Together 197

8 Physical Development in Preschoolers 199

Prologue: The Field Trip 200
Looking Ahead 200
Physical Growth 201
The Growing Body 201
The Growing Brain 202
Developmental Diversity and Your Life: Are Gender and Culture Related to the Brain's Structure? 203
The Links Between Brain Growth and Cognitive and Sensory Development 204
Sleep 205
Review 206
Health and Wellness 206
Nutrition: Eating the Right Foods 206
Illness in the Preschool Years 207
Injuries: Playing It Safe 208
Child Abuse and Psychological Maltreatment: The Grim Side of Family Life 210
From Research to Practice: Spanking: Why the Experts Say "No" 211
Resilience: Overcoming the Odds 213
Are You an Informed Consumer of Development?: Keeping Preschoolers Healthy 214
Review 215
Motor Development 215
Gross and Fine Motor Skills 216
Potty Wars: When—and How—Should Children Be Toilet Trained? 217
Handedness and Expression 218
Review 220
The Case of . . . Frustrated Desires 220
Epilogue • Looking Back • Key Terms and Concepts

9 Cognitive Development in the Preschool Years 223

Prologue: Off to Work We Go 224
Looking Ahead 224
Intellectual Development 225
Piaget's Stage of Preoperational Thinking 225
Information-Processing Approaches to Cognitive Development 230

Vygotsky's View of Cognitive Development: Taking Culture Into Account 233
Review 236
The Growth of Language 236
Language Development During the Preschool Years 237
How Living in Poverty Affects Language Development 238
Review 239
Schooling and Society 239
Early Childhood Education: Taking the Pre-Out of the Preschool Period 240
The Effectiveness of Child Care 241
Developmental Diversity and Your Life: Preschools around the World: Why Does the United States Lag Behind? 242
Preparing Preschoolers for Academic Pursuits: Does Head Start Truly Provide a Head Start? 243
From Research to Practice: Why It's Good to Read to Young Children 244
Learning From the Media: Television and Computers 245
Are You an Informed Consumer of Development?: Promoting Cognitive Development in Preschoolers: From Theory to the Classroom 246
Review 247
The Case of . . . The Secret Reader 247
Epilogue • Looking Back • Key Terms and Concepts

10 Social and Personality Development in the Preschool Years 251

Prologue: Feeling His Mother's Pain 252
Looking Ahead 252
Forming a Sense of Self 253
Psychosocial Development and Self-Concept 253
Developmental Diversity and Your Life: Developing Racial and Ethnic Awareness 254
Gender Identity: Developing Femaleness and Maleness 255
Review 258
Friends and Family: Preschoolers' Social Lives 259
The Development of Friendships and Play 259
Preschoolers' Family Lives 263
Are You an Informed Consumer of Development?: Disciplining Children 265
Review 265
Moral Development and Aggression 266
Developing Morality: Following Society's Rights and Wrongs 266
Aggression and Violence in Preschoolers 268
Social Learning and Cognitive Approaches to Aggression 269
Are You an Informed Consumer of Development?: Increasing Moral Behavior and Reducing Aggression in Preschool-Age Children 271
Violent TV Programs and Video Games: Are They Harmful? 271
From Research to Practice: Do Violent Video Games Make Children Behave Violently? 272
Review 273
The Case of . . . The Wrong Role Models? 273
Epilogue • Looking Back • Key Terms and Concepts
Putting It All Together 277

11 Physical Development in Middle Childhood 279

Prologue: Kristy Melanson 280
Looking Ahead 280
The Growing Body 281
Physical Development 281
Nutrition: Links to Overall Functioning 282
Childhood Obesity 283
Are You an Informed Consumer of Development?: Keeping Children Fit 285
Health During Middle Childhood 285
Psychological Disorders 287
Review 287
Motor Development and Safety 288
Motor Skills: Continuing Improvement 288
Threats to Children's Safety, Offline and Online 290
Review 291
Children With Special Needs 291
Sensory Difficulties: Visual, Auditory, and Speech Problems 292
From Research to Practice: Breaking the Silence: Good or Bad? 293
Attention-Deficit/Hyperactivity Disorder 294
Developmental Diversity: Mainstreaming and Full Inclusion of Children with Special Needs 295
Review 296
The Case of . . . Taking a Breather 296
Epilogue • Looking Back • Key Terms and Concepts

12 Cognitive Development in Middle Childhood 299

Prologue: Verniqua Turner and *Matilda* 300
Looking Ahead 300
Cognitive and Language Development 301
Piagetian Approaches to Cognitive Development 301
Information Processing in Middle Childhood 303

Vygotsky's Approach to Cognitive Development and Classroom Instruction 305
Language Development: What Words Mean 305
Bilingualism: Speaking in Many Tongues 307
From Research to Practice: The Benefits of Speaking One's Mind 308
Review 309
Schooling: The Three Rs (and More) of Middle Childhood 309
Schooling Around the World: Who Gets Educated? 309
School Readiness, Reading, and Success 311
Are You an Informed Consumer of Development?: Creating an Atmosphere that Promotes School Success 311
Multicultural Education 314
Developmental Diversity and Your life: Fostering A Bicultural Identity 315
Alternatives to Traditional Public Schooling 316
Review 317
Intelligence: Determining Individual Strengths 317
Intelligence Benchmarks: Differentiating the Intelligent From the Unintelligent 318
Group Differences in IQ 320
What IQ Tests Don't Tell: Alternative Conceptions of Intelligence 323
Falling Below and Above Intelligence Norms 325
Review 327
The Case of . . . The "Big Cheese" 327
Epilogue • Looking Back • Key Terms and Concepts

13 Social and Personality Development in Middle Childhood 331

Prologue: New Kid in Town 332
Looking Ahead 332
The Developing Self 333
Psychosocial Development and Self-Understanding in Middle Childhood 333
Self-Esteem: Developing a Positive—or Negative—View of Oneself 336
Developmental Diversity and Your Life: Are the Children of Immigrant Families Well Adjusted? 338
Review 338
Relationships: Building Friendship in Middle Childhood 339
Stages of Friendship: Changing Views of Friends 339
Individual Differences in Friendship: What Makes a Child Popular? 340
Gender and Friendships: The Sex Segregation of Middle Childhood 342
Cross-Race Friendships: Integration in and out of the Classroom 343
School-Yard—and Cyber-Yard—Bullies 343
Are You an Informed Consumer of Development?: Increasing Children's Social Competence 344
Review 345
The Family 345
The Changing Home Environment 345
When Both Parents Work Outside the Home: How Do Children Fare? 346
Diverse Family Arrangements 347
Race, Poverty, and Family Life 350
From Research to Practice: Closing the Digital Divide: Some Unintended Consequences 351
Group Care: Orphanages in the 21st Century 351
Review 352
The Case of . . . Too Rich for Me 353
Epilogue • Looking Back • Key Terms and Concepts
Putting It All Together 356

14 Physical Development in Adolescence 358

Prologue: The Stranger Down the Hall 359
Looking Ahead 359
Physical Maturation 360
Growth During Adolescence: The Rapid Pace of Physical and Sexual Maturation 360
Body Image: Reactions to Physical Changes in Adolescence 363
Nutrition and Food: Fueling the Growth of Adolescence 365
Eating Disorders: Anorexia Nervosa and Bulimia 366
Brain Development and Thought: Paving the Way for Cognitive Growth 367
Review 369
Stress and Coping 370
Origins of Stress: Reacting to Life's Challenges 370
From Research to Practice: Bullies and Their Victims: The Lingering Stress 371
Meeting the Challenge of Stress 372
Are You an Informed Consumer of Development?: Coping With Stress 373
Review 374
Threats to Adolescents' Well-Being 374
Illegal Drugs 374
Alcohol: Use and Abuse 375
Are You an Informed Consumer of Development?: Hooked on Drugs or Alcohol? 377
Tobacco: The Dangers of Smoking 377
Developmental Diversity and Your Life: Selling Death: Pushing Smoking to the Less Advantaged 378
Sexually Transmitted Infections 379
Review 381
The Case of . . . Moving Too Fast 381
Epilogue • Looking Back • Key Terms and Concepts

15 Cognitive Development in Adolescence 384

Prologue: Who Is This Person? 385

Looking Ahead 385

Intellectual Development 386
- Piaget's Formal Operational Stage and Adolescent Cognitive Development 386
- Information-Processing Perspectives: Gradual Transformations in Abilities 389
- Egocentrism in Thinking: Adolescents' Self-Absorption 389

Review 390

Moral Development 391
- Kohlberg's Approach to Moral Development 391
- Gilligan's Approach to Moral Development: Gender and Morality 393

Review 394

Schooling and Cognitive Development 394
- The Transition From Elementary School to Middle School 395
- Socioeconomic Status, Race, Ethnicity, and School Performance 396
- Part-Time Work: Students on the Job 397

From Research to Practice: Does Work Build Character? 399
- College: Pursuing Higher Education 399

Developmental Diversity and Your Life: Overcoming Gender and Racial Barriers to Achievement 403

Review 405

Choosing an Occupation 405
- Choosing a Career 405
- Gender and Career Choices: Women's Work 406

Are You an Informed Consumer of Development?: Choosing a Career 407

Review 408

The Case of . . . The Clueless Dreamer 408
Epilogue • Looking Back • Key Terms and Concepts

16 Social and Personality Development in Adolescence 412

Prologue: Choices 413

Looking Ahead 413

Identity: Asking "Who Am I?" 414
- Self-Concept and Self-Esteem 414
- Identity Formation: Change or Crisis? 416
- Marcia's Approach to Identity Development: Updating Erikson 417
- Religion and Spirituality 418
- Identity, Race, and Ethnicity 419
- Psychological Difficulties in Adolescence 419

Are You an Informed Consumer of Development?: Adolescent Suicide: How to Help 422

Review 423

Relationships: Family and Friends 423
- Family Ties: Changing Relationships 423
- Relationships With Peers: The Importance of Belonging 427

Developmental Diversity and Your Life: Race Segregation: The Great Divide of Adolescence 428
- Popularity and Peer Pressure in Adolescence 429
- Juvenile Delinquency: The Crimes of Adolescence 431

From Research to Practice: R U Friends 4 Real? Are Digital Communications Changing Teenagers' Friendships? 431

Dating, Sexual Behavior, and Teenage Pregnancy 432
- Dating: Close Relationships in the 21st Century 432

Review 432
- Sexual Relationships 433
- Sexual Orientation: Heterosexuality, Homosexuality, and Bisexuality 435
- Teenage Pregnancies 436

Review 438

The Case of. . . Too Much of a Good Thing 438
Epilogue • Looking Back • Key Terms and Concepts

Putting It All Together 441

Glossary 443

References 450

Credits 512

Name Index 517

Subject Index 535

Answers 543

Preface

Child development is a unique field of study. Unlike other academic disciplines, each of us has experience with its subject matter in very personal ways. It is a discipline that deals not just with ideas and concepts and theories, but one that above all has at its heart the forces that have made each of us who we are.

This text, *Child Development*, Seventh Edition, seeks to capture the discipline in a way that sparks, nurtures, and shapes readers' interest. It is meant to excite students about the field, to draw them into its way of looking at the world, and to mold their understanding of developmental issues. By exposing readers to both the current content and the promise inherent in child and adolescent development, the text is designed to keep interest in the discipline alive long after students' formal study of the field has ended.

Overview

Child Development, Seventh Edition, provides a broad overview of the field of development. It covers the full range of childhood and adolescence, from the moment of conception through the end of adolescence. The text furnishes a broad, comprehensive introduction to the field, covering basic theories and research findings, as well as highlighting current applications outside the laboratory. It covers childhood and adolescence chronologically, encompassing the prenatal period, infancy and toddlerhood, the preschool years, middle childhood, and adolescence. Within these periods, it focuses on physical, cognitive, and social and personality development.

The book seeks to accomplish the following four major goals:

- First and foremost, the book is designed to provide a broad, balanced overview of the field of child development. It introduces readers to the theories, research, and applications that constitute the discipline, examining both the traditional areas of the field as well as more recent innovations. The book pays particular attention to the applications developed by child and adolescent development specialists. Without slighting theoretical material, the text emphasizes what we know about development across childhood and adolescence, rather than focusing on unanswered questions. It demonstrates how this knowledge may be applied to real-world problems. In sum, the book highlights the interrelationships among theory, research, and application, accentuating the scope and diversity of the field. It also illustrates how child developmentalists use theory, research, and applications to help solve significant social problems.
- The second major goal of the text is to explicitly tie development to students' lives. Findings from the study of child and adolescent development have a significant degree of relevance to students, and this text illustrates how these findings can be applied in a meaningful, practical sense. Applications are presented in a contemporaneous framework, including current news items, timely world events, and contemporary uses of child development that draw readers into the field. Numerous descriptive scenarios and vignettes reflect everyday situations in people's lives, explaining how they relate to the field.

  For example, each chapter begins with an opening prologue that provides a real-life situation relating to the chapter subject area. All chapters also have an "Are You an Informed Consumer of Development" section, which explicitly suggests ways to apply developmental findings to students' experience. These sections portray how these findings can be applied, in a practical, hands-on way. Each chapter also includes a feature called "From Research to Practice" that discusses ways that developmental research is being used to answer the problems that society faces. Finally, there are numerous questions in figure and photo captions asking readers to take the perspective of people in a variety of professions that make use of child development, including health care professionals, educators, and social workers.
- The third goal of this book is to highlight both the commonalties and diversity of today's multicultural society. Consequently, every chapter has at least one "Developmental Diversity and Your Life" section. These features explicitly consider how cultural factors relevant to development both unite and diversify our contemporary global society. In addition, the book incorporates material relevant to diversity throughout every chapter.
- Finally, the fourth goal of the text is one that underlies the other three: making the field of child development engaging, accessible, and interesting to students. Child development is a joy both to study and teach because so much of it has direct, immediate meaning to our lives. Because all of us are involved in our own developmental paths, we are tied in very personal ways to the content areas covered by the book. *Child Development*, Seventh Edition, then, is meant to engage

and nurture this interest, planting a seed that will develop and flourish throughout readers' lifetimes.

- To accomplish this fourth goal, the book is "user-friendly." Written in a direct, conversational voice, it replicates as much as possible a dialogue between author and student. The text is meant to be understood and mastered on its own, without the intervention of an instructor. To that end, it includes a variety of pedagogical features. Each chapter contains a "Looking Ahead" overview that sets the stage for the chapter, a running glossary, a numbered summary, a list of key terms and concepts, and an epilogue containing critical thinking questions. In addition, each chapter has several "Review" sections asking questions that test mastery of the material.

The Philosophy Behind *Child Development*, Seventh Edition. *Child Development*, Seventh Edition blends and integrates theory, research, and applications. It is *not* an applied development book, focused solely on techniques for translating the knowledge base of development into answers to societal problems. Nor is it a theory-oriented volume, concentrating primarily on the field's abstract theories. Instead, the focus of the text is on the scope and breadth of human development during childhood and adolescence. The strategy of concentrating on the scope of the field permits the text to examine both the traditional core areas of the field, as well as evolving, nontraditional areas of development.

Furthermore, the book focuses on the here and now, rather than attempting to provide a detailed historical record of the field. Although it draws on the past where appropriate, it does so with a view toward delineating the field as it now stands and the directions toward which it is evolving. Similarly, while providing descriptions of classic studies, the emphasis is on current research findings and trends.

The book provides a broad overview of child and adolescent development, integrating the theory, research, and applications of the discipline. It is meant to be a book that readers will want to keep in their own personal libraries, one that they will take off the shelf when considering problems related to that most intriguing of questions: how do people get to be the way they are?

Specific Features

- *Chapter-opening prologues.* Each chapter begins with a short vignette describing an individual or situation that is relevant to the basic developmental issues being addressed in the chapter. For instance, the chapter on physical development in infancy describes a child's first steps, and the chapter on the social development in adolescents provides accounts of three different teenagers.
- *Looking Ahead sections.* These opening sections orient readers to the topics to be covered, bridging the opening prologue with the remainder of the chapter and providing orienting questions.
- *Learning Objectives.* Every chapter includes sequentially numbered learning objectives, stated as engaging questions and based on Bloom's taxonomy. They allow students to understand clearly what they are expected to learn. The learning objectives are tied to the Looking Back summary at the end of each chapter and are also keyed to test bank items.
- *From Research to Practice.* Each chapter includes a feature that focuses on the ways in which research in child development can be used both in terms of everyday child-rearing issues and for public policy. For instance, these features include discussions on new explanations for SIDS (sudden infant death syndrome), evaluations of the effectiveness of Montessori preschools, and how children are influenced by their siblings.
- *Developmental Diversity and Your Life section*. Every chapter has at least one "Developmental Diversity and Your Life" section incorporated into the text. These sections highlight issues relevant to the multicultural society in which we live. Examples of these sections include discussions of the cultural dimensions of motor development, the adjustment of children from immigrant families, multicultural education, and overcoming gender and racial barriers to achievement.
- *Becoming an Informed Consumer of Development*. Every chapter includes information on specific uses that can be derived from research conducted by developmental investigators. For instance, the text provides concrete information on exercising an infant's body and senses, keeping preschoolers healthy, increasing children's competence, and choosing a career.
- *Review sections*. Interspersed throughout each chapter are questions designed to aid in mastery of the material.
- *From the perspective of…* These questions, interspersed throughout each chapter, ask students to take the perspective of someone working in an occupation that relies on findings of child development, including the fields of health care, education, and social work.
- *The Case of…* Every chapter includes a case study. Case studies describe an intriguing situation related to the topics discussed in the chapter, and they end by asking students questions designed to evoke critical thinking about the case and the chapter content.
- *End-of-chapter material*. Each chapter ends with a summary (keyed to chapter learning objectives) and a list of key terms and concepts. This material is designed to help students study and retain the information in the chapter. Finally, there is a short epilogue that includes critical thinking questions relating to the prologue at the opening of the chapter. Because the opening prologues serve as case studies that foreshadow the topics that the chapter will address, these

end-of-chapter thought-provoking questions provide a way of tying the chapter together. They also illustrate how the concepts addressed in the chapter can be applied to the real-world situation described in the opening prologue.

- *End-of-part material*. Every part of the book concludes with material that integrates different developmental domains during a particular age range. A vignette that captures a developmental issue or theme is considered jointly from a physical, cognitive, and social and personality point of view, helping students to understand how the various perspectives work together to explain development.

What's New in This Edition?

Child Development, Seventh Edition, includes a set of extraordinary online interactivities designed to engage students and promote their learning. All newly created, these interactivities provide an exciting means for students to explore and more deeply understand the core concepts of child development.

Furthermore, chapter openers and epilogues have been replaced or updated, introducing students to the real-world implications of the chapter topic. Moreover, all *From Research to Practice* features—which describe a contemporary developmental research topic and its applied implications—are new to this edition.

Finally, the Seventh Edition incorporates a significant amount of new and updated information. For instance, the revision addresses important issues such as behavioral genetics, brain development, evolutionary perspectives, and social networking. In addition, there is an increased emphasis on the findings of neuroscientists and brain scan research, reflecting advances in the field. The new edition also incorporates changes relating to psychological disorders reflecting the publication of *DSM-5*.

New topics appear in to every chapter. A sampling of specific topics that have been either newly included or expanded illustrates the scope of the revision:

Chapter 1

Update on the first person conceived *in vitro*
Aggression, juvenile delinquency, and video game play
Statistics on aggression worldwide

Chapter 2

New examples of policy issues informed by lifespan developmental research
Research on same-sex parenting efficacy
Debunking relationship between vaccination and autism
New *DSM-5* terminology: autism spectrum disorder
Scaffolding and Vygotsky
New case study
Emerging adulthood

Chapter 3

Transgenerational epigenetic inheritance
Placental role in brain development
Down syndrome treatment
In vitro fertilization success rates
In vitro fertilization live birth rates
Psychological consequences of miscarriage
Statistics on international abortion incidence
Clarified APA conclusions on abortion aftereffects
Incidence of hunger worldwide
Miscarriage leads to higher risk of postpartum depression after healthy child is born
New abortion statistics
Added *DSM-5* terminology (schizophrenia spectrum disorder, major depression disorder, autism spectrum disorder)
Added additional causes of miscarriage
Consequence of knowing one is pregnant earlier and earlier knowledge of miscarriage
New case study

Chapter 4

In utero tumor removal
Controversy regarding routine screening
Statistics on infant mortality
Water birthing
Costs of caring for premature infants
Increase in Cesarean deliveries
Higher risk of mental illness in preterm infants
Reorganized section on medical screening
Individual differences in labor
Deleted states of arousal
Average length of hospital stay after giving birth

Chapter 5

Infants' affinity to attractive faces
Reduced rates of infection for breastfed infants
Shaken baby syndrome incidence and results
Brain scan showing shaken baby syndrome damage
Link between Cesarean delivery and infant obesity
New statistics on incidence of SIDS
Statistics on birth attendants worldwide
Importance of touch for social development

Chapter 6

Efficacy of educational media for children
Parent responsiveness to infants' babbling
Infant understanding of movement trajectories
Infant understanding of gravity
Explanation of why Bayley Scales might be administered

Chapter 7

Raising gender-free children
Infants' abilities to distinguish race
Difficulties in raising children who don't differentiate on the basis of race
Evidence of infants' theory of mind at 18 months
Research showing 10 and 13-month-olds mentally represent social dominance
Infant preferences for helpful vs. antisocial behavior
Androgen exposure in infancy and gender-typed behavior

Chapter 8

Reinforced the importance of vaccinations
Lack of link between vaccination and autism spectrum disorder
Incorporation of *DSM-5* term "autism spectrum disorder"
Importance of serving food with low sodium and fat content
Additional characteristics of high-quality child care
Obesity incidence trending down in last decade
Added statistics on incidence of psychological disorders in preschoolers
Changed term "emotional disorders" to "psychological disorders" and expanded the topic

Chapter 9

Montessori schooling
Meta-analysis results of reading to children
Head Start enrollment figures
Head Start outcomes
Preschool benefits 25 years after participation
Additional characteristics of high quality child care

Chapter 10

Effect of violent video games
Incidence of autism
Spanking as a violation of human rights
Genetic roots of generosity and selfishness
Methods for promoting generosity and empathy

Chapter 11

Cost of psychological disorders in children
ADHD incidence and treatment
Increased muscular strength during middle childhood
Bone ossification
Dental development
Cochlear implants
DSM-5 terms: childhood-onset fluency disorder, specific learning disorder, major depressive disorder

Chapter 12

Benefits of bilingualism
Emotional well-being and bilingualism
Change in term "mental retardation" to "intellectual disability"
Changes in brain due to reading
New case study
Charter school
Public schooling
Private schools

Chapter 13

Decreasing digital divide between poor and affluent children
Unmonitored digital use in children raised in poverty
Immigrant children's physical health
Sibling experiences in different cultural contexts
Anti-bullying programs
Delete material on expectation effects
Degree of cross-race friendships and diversity of setting

Chapter 14

Brain damage due to binge drinking in teenagers
Cyberbullying
Risky behavior caused by overestimation of rewards, not only underestimation of risks
New AIDS statistics
Increasing marijuana use among high school students

Chapter 15

Summer learning loss
Stealth learning
Waivers for "No Child Left Behind" law
Use of Adderall to increase academic performance
Choices between media options by adolescents
Media use supplants other forms of social interaction
New figure on teens and cell phone use
New case study
Working and adolescent character

Chapter 16

Friendship and social networks
Sexting
Teenage pregnancy rates at historic lows
Declines in rate of adolescent sexual intercourse
Increase in use of condoms
Religion as viewing the world in terms of intentional design
Cross-group friendships promote more positive intergroup attitudes
Gender-nonconforming gays and lesbian adjustment
More positive societal attitudes towards homosexuality
Increase in bicultural identity
Use of *DSM-5* terminology: major depressive disorder

In addition, a wealth of contemporary research is cited in this edition. Hundreds of new research citations have been added, most from the last few years.

REVEL™

Educational technology designed for the way today's students read, think, and learn

When students are engaged deeply, they learn more effectively and perform better in their courses. This simple fact inspired the creation of REVEL: an immersive learning experience designed for the way today's students read, think, and learn. Built in collaboration with educators and students nationwide, REVEL is the newest, fully digital way to deliver respected Pearson content. REVEL enlivens course content with media interactives and assessments—integrated directly within the authors' narrative—that provide opportunities for students to read about and practice course material in tandem. This immersive educational technology boosts student engagement, which leads to better understanding of concepts and improved performance throughout the course. Learn more about: REVEL http://www.pearsonhighered.com/revel/

The Seventh Edition includes integrated videos and interactive media content throughout, allowing students to explore topics more deeply at the point of relevancy. Revel also offers the ability for students to assess their content mastery by taking multiple-choice quizzes that offer instant feedback and by participating in a variety of writing assignments such as peer-reviewed questions and auto-graded assignments.

Ancillaries

Child Development, Seventh Edition, is accompanied by a superb set of ancillary teaching materials. These include the following:

- **Instructor's Resource Manual** (0134026543). Designed to make your lectures more effective and save you preparation time, this extensive resource gathers together the most effective activities and strategies for teaching your course. The Instructor's Resource Manual includes learning objectives, key terms and concepts, self-contained lecture suggestions and class activities for each chapter with handouts, supplemental reading suggestions, and an annotated list of additional multimedia resources. The Instructor's Resource Manual can be downloaded via the Instructor's Resource Center at www.pearsonhighered.com.
- **PowerPoint Lecture Slides** (0134026535). These PowerPoints provide an active format for presenting concepts from each chapter and feature relevant figures and tables from the text. Available for download on the Instructor's Resource Center at www.pearsonhighered.com.
- **Test Item File** (0205852726). The test bank contains multiple choice, true/false, and essay questions. Each question has been accuracy-checked to ensure that the correct answer was marked and the page reference was accurate. Available for download on the Instructor's Resource Center at www.pearsonhighered.com.
- **MyTest Test Bank** (0134026519) A powerful assessment-generation program that helps instructors easily create and print quizzes and exams. Questions and tests can be authored online, allowing instructors ultimate flexibility and the ability to efficiently manage assessments anytime, anywhere! Instructors can easily access existing questions, edit, create, and store using simple drag-and-drop technique and Word-like controls. Data on each question provide information on difficulty level and page number of corresponding text discussion. In addition, each question maps to the text's major section and learning objective. For more information, go to www.PearsonMyTest.com.
- **MyVirtualChild. MyVirtualChild** is an interactive simulation that allows students to raise a child from birth to age 18 and monitor the effects of their parenting decisions over time. By incorporating physical, social, emotional, and cognitive development at several age levels, MyVirtualChild helps students think critically as they apply their course work to the practical experiences of raising a virtual child. You can access MyVirtualChild within MyPsychLab, or separately at www.myvirtualchild.com.
- ***MyPsychLab*** **(ISBN** 013401202X). Available at www.mypsychlab.com, **MyPsychLab** is an online homework, tutorial, and assessment program that truly engages students in learning. It helps students better prepare for class, quizzes, and exams—resulting in better performance in the course. It provides educators a dynamic set of tools for gauging individual and class performance:
  - ***Customizable*** MyPsychLab is customizable. Instructors choose what students' course looks like. Homework, applications, and more can easily be turned on and off.
  - ***Blackboard Single Sign-On*** MyPsychLab can be used by itself or linked to any course management system. Blackboard single sign-on provides deep linking to all new MyPsychLab resources.
  - ***Pearson eText and Chapter Audio*** Like the printed text, students can highlight relevant passages and add notes. The Pearson eText can be accessed through laptops, iPads, and tablets. Download the free Pearson eText app to use on tablets. Students can also listen to their text with the Audio eText.

- ***Assignment Calendar and Gradebook*** A drag and drop assignment calendar makes assigning and completing work easy. The automatically graded assessment provides instant feedback and flows into the gradebook, which can be used in the MyPsychLab or exported.
- ***Personalized Study Plan*** Students' personalized plans promote better critical thinking skills. The study plan organizes students' study needs into sections, such as Remembering, Understanding, Applying, and Analyzing.

Acknowledgments

I am grateful to the following reviewers who provided a wealth of comments, criticism, and encouragement:

Beth Bigler, Pellissippi State Community College
Heidemarie Blumenthal, University of North Texas
Jamie Borchardt, Tarleton State University
Johnny Castro, Brookhaven College
Nate Cottle, University of Central Oklahoma
Christie Cunningham, Pellissippi State Community College
Lisa Fozio-Thielk, Waubonsee Community College
Sara Goldstein, Montclair State University
Christina Gotowka, Tunxis Community College
Joel Hagaman, University of the Ozarks
Nicole Hansen-Rayes, City Colleges of Chicago/Daley College
Myra Harville, Holmes Community College
Mary Hughes Stone, San Francisco State University
Suzanne Hughes, Southwestern Community College
Earleen Huff, Amarillo College
Jo Jackson, Lenoir Community College
Jennifer Kampmann, South Dakota State University
Dr. William Kimberlin, Lorain County Community College
Francesca Longo, Boston College
Mark Lyerly, Burlington County College
Rebecca Marcon, University of North Florida
Kathleen Miller Green, North Idaho College
Suzanne Mira-Knippel, Southwestern Community College
Ron Mulson, Hudson Valley Community College
Tara Newman, Stephen F. Austin State University
Laura Pirazzi, San Jose State University
Katherine K. Rose, Texas Woman's University
Jeffrey Vallon, SUNY Rockland Community College
Amy Van Hecke, Marquette University
Traci Van Prooyen, University of Illinois at Springfield
Angela Williamson, Tarrant County College
Melanie Yeschenko, Community College of Allegheny County

Many others deserve a great deal of thanks. I am indebted to the many people who provided me with a superb education, first at Wesleyan University and later at the University of Wisconsin. Specifically, Karl Scheibe played a pivotal role in my undergraduate education, and the late Vernon Allen acted as mentor and guide through my graduate years. It was in graduate school that I learned about development, being exposed to such experts as Ross Parke, Joel Levin, Herb Klausmeier, and many others.

My education continued when I became a professor. I am especially grateful to my colleagues at the University of Massachusetts, who make the university such a wonderful place in which to teach and do research.

Several people played central roles in the development of this book. Christopher Poirier provided extraordinary help on the digital interactivities, and I am thankful for his help on this and on other projects for which he provided help. I'm also grateful to John Bickford, who provided significant editorial support. John Graiff was essential in juggling and coordinating the multiple aspects of writing this book, and I am very grateful for the central role he played.

I am also grateful to the superb Pearson team that was instrumental in the development of this book. Amber Chow, acquisitions editor, always provided good ideas, support, and direction. I am grateful for her enthusiasm and creativity. Program Manager Diane Szulecki, master of all details, went way beyond the call of duty to provide direction and support in every respect. Finally, I'd like to thank Marketing Specialists Lindsey Prudhomme-Gill and Kate Stewart, on whose skills I'm counting. It's a privilege to be part of this world-class team.

I also wish to acknowledge the members of my family, who play such a central role in my life. My brother, Michael, my sisters-in-law and brother-in-law, my nieces and nephews, all make up an important part of my life. In addition, I am always indebted to the older generation of my family, who led the way in a manner I can only hope to emulate. I will always be obligated to Harry Brochstein, Mary Vorwerk, and Ethel Radler for their wisdom and support. Most of all, the list is headed by my father, the late Saul Feldman, and my mother, Leah Brochstein.

In the end, it is my immediate family who deserve the greatest thanks. My son Jon, his wife, Leigh, and my grandsons Alex and Miles; my son Josh and his wife Julie; and my daughter Sarah and husband Jeff, not only are nice, smart, and good-looking, but my pride and joy. And ultimately my wife, Katherine Vorwerk, provides the love and grounding that make everything worthwhile. I thank them all, with love.

Robert S. Feldman
University of Massachusetts Amherst

About the Author

Robert S. Feldman is Professor of Psychological and Brain Sciences and Deputy Chancellor of the University of Massachusetts Amherst. A recipient of the College Distinguished Teacher Award, he teaches classes ranging in size from 10 to nearly 500 students. During the course of more than two decades as a college instructor, he has taught both undergraduate and graduate courses at Mount Holyoke College, Wesleyan University, and Virginia Commonwealth University in addition to the University of Massachusetts Amherst.

A Fellow of both the American Psychological Association and the Association for Psychological Science, Professor Feldman received a B.A. with High Honors from Wesleyan University (and from which he received the Distinguished Alumni Award). He has an MS and PhD from the University of Wisconsin–Madison. He is a winner of a Fulbright Senior Research Scholar and Lecturer award, and he has written more than 200 books, book chapters, and scientific articles. He has edited *Development of Nonverbal Behavior in Children* (Springer-Verlag) and *Applications of Nonverbal Behavioral Theory and Research* (Erlbaum), and co-edited *Fundamentals of Nonverbal Behavior* (Cambridge University Press). He is also author of *Development Across the Life Span, Understanding Psychology*, and *P.O.W.E.R. Learning: Strategies for Success in College and Life*. His books have been translated into many languages, including Spanish, French, Portuguese, Dutch, Chinese, Korean, German, Arabic, Tagalog, and Japanese, and more than 2.5 million students have used his textbooks.

Professor Feldman's research interests include honesty and deception in everyday life, work that he described in *The Liar in Your Life*, a trade book published in 2009. His research has been supported by grants from the National Institute of Mental Health and the National Institute on Disabilities and Rehabilitation Research. He is also president of the Federation of Associations in the Behavioral and Brain Sciences Foundation, an organization that promotes the social sciences, and a member of the board of New England Public Radio.

Professor Feldman loves music, is an enthusiastic pianist, and enjoys cooking and traveling. He has three children and two young grandsons. He and his wife, a psychologist, live in western Massachusetts in a home overlooking the Holyoke Mountain Range.

Chapter 1

An Introduction to Child Development

Learning Objectives

LO1 What is the scope of the field of child development?

LO2 How would you describe the major societal influences that determine development?

LO3 What were the earliest views of childhood and children?

LO4 How has childhood been regarded since the 20th century?

LO5 How would you explain the key issues and questions in the field of child development?

LO6 What is the future of child development likely to hold?

Prologue: New Conceptions

What if, for your entire life, the image that others held of you was colored by the manner in which you were conceived?

In some ways, that's what it has been like for Louise Brown, who was the world's first "test-tube baby," born by *in vitro fertilization (IVF)*, a procedure in which fertilization of a mother's egg by a father's sperm takes place outside of the mother's body.

Louise was a preschooler when her parents told her how she was conceived, and throughout her childhood she was bombarded with questions. It became routine to explain to her classmates that she, in fact, was not born in a laboratory.

At times, Louise felt completely alone. "I thought it was something peculiar to me," she recalled. But as she grew older, her sense of isolation diminished as more and more children were born via IVF.

In fact, today Louise is hardly alone. She is among the more than 5 million babies that have been born using the procedure, one that has almost become routine. And at the age of 28, Louise became a mother herself, giving birth to a baby boy named Cameron—conceived, incidentally, the old-fashioned way (Falco, 2012; ICMART, 2012).

Louise Brown (foreground, center) and friends

Looking Ahead

Louise Brown's conception may have been novel, but her development, from infancy onward, has followed predictable patterns. While the specifics of our development vary—some of us encounter economic deprivation or live in war-torn territories; others contend with family issues like divorce and stepparents—the broad strokes of the development that is set in motion the moment we are conceived are remarkably similar for all of us.

Louise Brown's conception in the lab is just one of the brave new worlds of the 21st century. Issues ranging from cloning and the consequences of poverty on development to the effects of culture and race raise significant developmental concerns. Underlying these are even more fundamental issues. How do children develop physically? How does their understanding of the world grow and change over time? And how do our personalities and our social world develop as we move from birth through adolescence?

These questions, and many others we'll encounter throughout this book, are central to the field of child development. Consider, for example, the range of approaches that different specialists in child development might take when considering the story of Louise Brown:

- Child development researchers who investigate behavior at the level of biological processes might determine whether Louise's physical functioning before her birth was affected by her conception outside the womb.
- Specialists in child development who study genetics might examine how the biological endowment from Louise's parents affects her later behavior.

- Child development specialists who investigate the ways thinking changes over the course of childhood might examine how Louise's understanding of the nature of her conception changed as she grew older.
- Researchers in child development who focus on physical growth might consider whether her growth rate differed from children conceived more traditionally.
- Child development experts who specialize in the social world of children might look at the ways that Louise interacted with other children and the kinds of friendships she developed.

Although their interests and approaches take many forms, all these specialists share one concern: understanding the growth and change that occur during the course of childhood and adolescence. Developmentalists study how both our biological inheritance from our parents and the environment in which we live jointly affect our behavior.

More specifically, some researchers in child development focus on explaining how our genetic background can determine not only how we look but also how we behave and how we relate to others—that is, matters of personality. These professionals explore ways to identify how much of our potential as human beings is provided—or limited—by heredity. Other child development specialists look to the environment in which we are raised, exploring ways in which our lives are shaped by the world that we encounter. They investigate the extent to which we are shaped by our early environments and how our current circumstances influence our behavior in both subtle and obvious ways.

Whether they focus on heredity or environment, all child development specialists hope that their work will ultimately inform and support the efforts of professionals whose careers are devoted to improving the lives of children. Practitioners in fields ranging from education to health care and social work draw on the findings of child development researchers, using their research findings to advance children's welfare.

In this chapter, we orient ourselves to the field of child development. We begin with a discussion of the scope of the discipline, illustrating the wide array of topics it covers and the range of ages it examines, from the moment of conception through the end of adolescence. We also survey the foundations of the field and examine the key issues and questions that underlie child development. Finally, we consider where the child development field is likely to go in the future.

An Orientation to Child Development

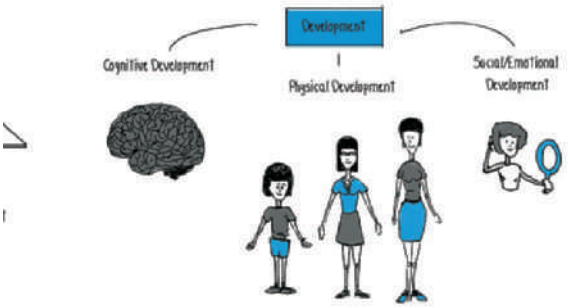
Have you ever wondered how it is possible that an infant tightly grips your finger with tiny, perfectly formed hands? Or marveled at how a preschooler methodically draws a picture? Or considered the way an adolescent can make involved decisions about whom to invite to a party or the ethics of downloading music files? If you've ever pondered such things, you are asking the kinds of questions that scientists in the field of child development pose. **Child development** is the scientific study of the patterns of growth, change, and stability that occur from conception through adolescence.

Although the definition of the field seems straightforward, the simplicity is somewhat misleading. In order to understand what child development is actually about, we need to look underneath the various parts of the definition.

In its study of growth, change, and stability, child development takes a scientific approach. Like members of other scientific disciplines, researchers in child development test their assumptions about the nature and course of human development by applying scientific methods. As we'll see in the next chapter, researchers formulate theories about development, and they use methodical, scientific techniques to validate the accuracy of their assumptions systematically.

Child development focuses on *human* development. Although there are some developmentalists who study the course of development in nonhuman species, the vast majority examine growth and change in people. Some seek to understand universal principles of development, whereas others focus on how cultural, racial, and ethnic differences affect the course of development. Still others aim to understand the unique aspects of individuals, looking at the traits and characteristics that differentiate one person from another. Regardless of approach, however, all child developmentalists view development as a continuing process throughout childhood and adolescence.

As developmental specialists focus on the ways people change and grow during their lives, they also consider stability in children's and adolescents' lives. They ask in which areas and in what periods people show change and growth and when and how their behavior reveals consistency and continuity with prior behavior.



Watch the Video: Introduction to Human Development

child development The field that involves the scientific study of the patterns of growth, change, and stability that occur from conception through adolescence.

Finally, although child development focuses on childhood and adolescence, the process of development persists throughout *every* part of people's lives, beginning with the moment of conception and continuing until death. Developmental specialists assume that in some ways people continue to grow and change right up to the end of their lives, while in other respects their behavior remains stable. At the same time, developmentalists believe that no particular, single period of life governs all development. Instead, they believe that every period of life contains the potential for both growth and decline in abilities and that individuals maintain the capacity for substantial growth and change throughout their lives.

Characterizing Child Development: The Scope of the Field

LO1 What is the scope of the field of child development?

Clearly, the definition of child development is broad, and the scope of the field is extensive. Consequently, professionals in child development cover several quite diverse areas, and a typical developmentalist will specialize in both a topical area and age range.

TOPICAL AREAS IN CHILD DEVELOPMENT. The field of child development includes three major topics or approaches:

- Physical development
- Cognitive development
- Social and personality development

A child developmentalist might specialize in a particular one of these topical areas. As an example, some developmentalists focus on **physical development**, examining the ways in which the body's makeup—the brain, nervous system, muscles, and senses, as well as the need for food, drink, and sleep—helps determine behavior. For instance, one specialist in physical development might study the effects of malnutrition on the pace of growth in children, while another might look at how an athlete's physical performance changes during adolescence.

Other developmental specialists examine **cognitive development**, seeking to understand how growth and change in intellectual capabilities influence a person's behavior. Cognitive developmentalists study learning, memory, problem solving, and intelligence. For example, specialists in cognitive development might want to see how problem solving changes over the course of childhood or whether cultural differences exist in the way people explain the reasons for their academic successes and failures. They would also be interested in how a person who experiences significant or traumatic events early in life would remember them later in life (Alibali, Phillips, & Fischer, 2009; Dumka et al., 2009; Penido et al., 2012).

Finally, some developmental specialists focus on personality and social development. **Personality development** is the study of stability and change in the enduring characteristics that differentiate one person from another. **Social development** is the way in which individuals' interactions with others and their social relationships grow, change, and remain stable over the course of life. A developmentalist interested in personality development might ask whether there are stable, enduring personality traits throughout the life span, while a specialist in social development might examine the effects of racism, poverty, or divorce on development (Evans, Boxhill, & Pinkava, 2008; Lansford, 2009; Vélez, et al., 2011). These four major topic areas—physical, cognitive, social, and personality development—are summarized in Table 1.1.

AGE RANGES AND INDIVIDUAL DIFFERENCES. As they specialize in chosen topical areas, child developmentalists typically look at particular age ranges. They usually divide childhood and adolescence into broad stages: the prenatal period (the period from conception to birth), infancy and toddlerhood (birth to age 3), the preschool period (ages 3 to 6), middle childhood (ages 6 to 12), and adolescence (ages 12 to 20).

It's important to keep in mind that these broad periods—which are largely accepted by child developmentalists—are social constructions. A *social construction* is a shared notion of reality, one that is widely accepted but is a function of society and culture at a given time.

Although most child developmentalists accept these broad periods, the age ranges themselves are in many ways arbitrary. Some periods have one clear-cut boundary (infancy begins with birth, the preschool period ends with entry into public school, and adolescence starts with sexual maturity), while others don't.

For instance, consider the separation between middle childhood and adolescence, which usually occurs around the age of 12. Because the boundary is based on a biological

physical development Development involving the body's physical makeup, including the brain, nervous system, muscles, and senses and the need for food, drink, and sleep

cognitive development Development involving the ways that growth and change in intellectual capabilities influence a person's behavior

personality development Development involving the ways that the enduring characteristics that differentiate one person from another change over the life span

social development The way in which individuals' interactions with others and their social relationships grow, change, and remain stable over the course of life

Table 1.1 Approaches to Child Development

Orientation	Defining Characteristics	Examples of Questions Asked[a]
Physical development	Examines how brain, nervous system, muscles, sensory capabilities, and needs for food, drink, and sleep affect behavior	What determines the sex of a child? (3) What are the long-term consequences of premature birth? (4) What are the benefits of breast-feeding? (5) What are the consequences of early or late sexual maturation? (14)
Cognitive development	Emphasizes intellectual abilities, including learning, memory, language development, problem solving, and intelligence	What are the earliest memories that can be recalled from infancy? (6) What are the consequences of watching television? (9) Are there benefits to bilingualism? (12) Are there ethnic and racial differences in intelligence? (12) How does an adolescent's egocentrism affect his or her view of the world? (15)
Personality and social development	Examines enduring characteristics that differentiate one person from another and how interactions with others and social relationships grow and change over the life span	Do newborns respond differently to their mothers than to others? (4) What is the best procedure for disciplining children? (10) When does a sense of gender develop? (10) How can we promote cross-race friendships? (13) What are the causes of adolescent suicide? (16)

[a] Numbers in parentheses indicate in which chapter the question is addressed.

change, the onset of sexual maturation, which varies greatly from one individual to another, the specific age of entry into adolescence varies from one person to the next.

Furthermore, some developmentalists have proposed entirely new developmental periods. For example, psychologist Jeffrey Arnett argues that adolescence extends into *emerging adulthood*, a period beginning in the late teenage years and continuing into the mid-twenties. During emerging adulthood, people are no longer adolescents, but they haven't fully taken on the responsibilities of adulthood. Instead, they are still trying out different identities and engaging in self-focused exploration (Arnett, 2010, 2011; de Dios, 2012; Nelson, 2013).

Watch the Video: The Features of Emerging Adulthood Across Cultures

This wedding of two children in India is an example of how cultural factors play a significant role in determining the age when a particular event is likely to occur.

In short, there are substantial *individual differences* in the timing of events in people's lives—a biological fact of life. People mature at different rates and reach developmental milestones at different points. Environmental factors also play a significant role in determining the age at which a particular event is likely to occur. For example, the typical age at which people develop romantic attachments varies substantially from one culture to another, depending in part on the way that relationships are viewed in a given culture.

It is important to keep in mind, then, that when developmental specialists discuss age ranges, they are talking about averages—the times when people, on average, reach particular milestones. Some children will reach the milestone earlier, some later, and many—in fact, most—will reach it around the time of the average. Such variation becomes noteworthy only when children show substantial deviation from the average. For instance, parents whose child begins to speak at a much later age than average might decide to have their son or daughter evaluated by a speech therapist.

Furthermore, as children grow older, they become more likely to deviate from the average and exhibit individual differences. In very young children, a good part of developmental change is genetically determined and unfolds automatically, making development fairly similar in different children. But as children age, environmental factors become more potent, leading to greater variability and individual differences as time passes.

THE LINKS BETWEEN TOPICS AND AGES. Each of the broad topical areas of child development—physical, cognitive, and social and personality development—plays a role throughout childhood and adolescence. Consequently, some developmental experts focus on physical development during the prenatal period and others on what occurs during adolescence. Some might specialize in social development during the preschool years, while others look at social relationships in middle childhood. And still others might take a broader approach, looking at cognitive development through every period of childhood and adolescence (and beyond).

The variety of topical areas and age ranges studied within the field of child development means that specialists from many diverse backgrounds and areas of expertise consider themselves child developmentalists. Psychologists who study behavior and mental processes, educational researchers, geneticists, and physicians are only some of the people who specialize and conduct research in child development. Furthermore, developmentalists work in a variety of settings, including university departments of psychology, education, human development, and medicine, as well as nonacademic settings as varied as human service agencies and child care centers.

The diversity of specialists working under the broad umbrella of child development brings a variety of perspectives and intellectual richness to the field. In addition, it permits the research findings of the field to be used by practitioners in a wide array of applied professions. Teachers, nurses, social workers, child care providers, and social policy experts all rely on the findings of child development to make decisions about how to improve children's welfare.

DEVELOPMENTAL DIVERSITY

How Culture, Ethnicity, and Race Influence Development

In the United States, parents praise young children who ask a lot of questions for being "intelligent" and "inquisitive." The Dutch consider such children "too dependent on others." Italian parents judge inquisitiveness as a sign of social and emotional competence, not intelligence. Spanish parents praise character far more than intelligence, and the Swedes value security and happiness above all.

What are we to make of the diverse parental expectations cited above? Is one way of looking at children's inquisitiveness right and the others wrong? Probably not, if we take into consideration the cultural contexts in which parents operate. In fact, different cultures and subcultures have their own views of appropriate and inappropriate methods and interpretations of childrearing, just as they have different developmental goals for children (Feldman & Masalha, 2007; Huijbregts et al., 2009; Chen & Tianying Zheng, 2012).

Specialists in child development must take into consideration broad cultural factors. For example, as we'll discuss further in Chapter 10, children growing up in Asian societies tend to have a *collectivistic orientation*, focusing on the interdependence among members of society. In contrast, children in Western societies are more likely to have an *individualistic orientation*, in which they concentrate on the uniqueness of the individual.

Similarly, child developmentalists must also consider ethnic, racial, socioeconomic, and gender differences if they are to achieve an understanding of how people change and grow throughout the life span. If these specialists succeed in doing so, not only can they achieve a better understanding of human development, but they may also be able to derive more precise applications for improving the human social condition.

Efforts to understand how diversity affects development have been hindered by difficulties in finding an appropriate vocabulary. For example, members of the research community—as well as society at large—have sometimes used terms such as *race* and *ethnic group* in inappropriate ways. *Race* is a biological concept, which should be employed to refer to classifications based on physical and structural characteristics of species. In contrast, *ethnic group* and *ethnicity* are broader terms, referring to cultural background, nationality, religion, and language.

The concept of race has proven particularly problematic. Although it formally refers to biological factors, race has taken on substantially more meanings—many of them inappropriate—that range from skin color to religion and culture. Moreover, the concept of race is exceedingly imprecise; depending on how it is defined, there are between three and 300 races, and no race is genetically distinct. The fact that 99.9 percent of humans' genetic makeup is identical in all humans makes the question of race seem comparatively insignificant (Smedley & Smedley, 2005; Fish, 2011; Balis & Aman, 2013).

In addition, there is little agreement about which names best reflect different races and ethnic groups. Should the term *African American*—which has geographical and cultural implications—be preferred over *black*, which focuses primarily on skin color? Is *Native American* preferable to *Indian*? Is *Hispanic* more appropriate than *Latino*? And how can

researchers accurately categorize people with multiethnic backgrounds? The choice of category has important implications for the validity and usefulness of research. The choice even has political implications. For example, the decision to permit people to identify themselves as "multiracial" on U.S. government forms and in the U.S. Census initially was highly controversial, although it is now routine (Perlmann & Waters, 2002; Saulny, 2011).

As the proportion of minorities in U.S. society continues to increase, it becomes crucial to take the complex issues associated with human diversity into account in order to fully understand development. In fact, it is only by looking for similarities and differences among various ethnic, cultural, and racial groups that developmental researchers can distinguish principles of development that are universal from ones that are culturally determined. In the years ahead, it is likely that child development will move from a discipline that primarily focuses on children with North American and European backgrounds to one that encompasses the development of children around the globe (Wardle, 2007; Kloep et al., 2009; Bornstein & Lansford, 2013).

The face of the United States is changing as the proportion of children from different backgrounds is increasing.

Cohort Influences on Development: Developing with Others in a Social World

LO2 How would you describe the major societal influences that determine development?

Born in 1947, Bob is a baby boomer, arriving soon after the end of World War II, when an enormous bulge in the United States birthrate occurred as soldiers returned home from overseas. He was an adolescent at the height of the civil rights movement and the beginning of protests against the Vietnam War. His mother, Leah, was born in 1922; she is part of the generation that passed its childhood and teenage years in the shadow of the Great Depression. Bob's son, Jon, was born in 1975. Now building a career after graduating from college and starting his own family, he is a member of what has been called Generation X. Jon's younger sister, Sarah, who was born in 1982, is part of the next generation, which sociologists have called the Millennial Generation.

These people are in part products of the social times in which they live. Each belongs to a particular **cohort**, a group of people born at around the same time in the same place. Such major social events as wars, economic upturns and depressions, famines, and epidemics (like the one due to the AIDS virus) work similar influences on members of a particular cohort (Mitchell, 2002; Dittman, 2005).

Cohort effects provide an example of *history-graded influences*, which are biological and environmental influences associated with a particular historical moment. For instance, children who lived in New York City during the 9/11 terrorist attack on the World Trade Center experienced shared biological and environmental challenges due to the attack. Their development is going to be affected by this normative history-graded event (Bonanno et al., 2006; Laugharne, Janca, & Widiger, 2007; Park, Riley & Snyder, 2012).

Watch the Video: Cohort Effects

In contrast, *age-graded influences* are biological and environmental influences that are similar for individuals in a particular age group, regardless of when or where they are raised. For example, biological events such as puberty and menopause are universal events that occur at relatively the same time throughout all societies. Similarly, a sociocultural event such as entry into formal education can be considered a normative age-graded influence because it occurs in most cultures around age six.

cohort A group of people born at around the same time in the same place

FROM AN EDUCATOR'S PERSPECTIVE

How would a student's cohort membership affect his or her readiness for school? For example, what would be the benefits and drawbacks of coming from a cohort in which Internet use was routine, compared with earlier cohorts prior to the appearance of the Internet?

Development is also affected by *sociocultural-graded influences*, which include ethnicity, social class, subcultural membership, and other factors. For example, sociocultural-graded influences will be considerably different for immigrant children who speak English as a second language than for children born in the United States who speak English as their first language (Rose et al., 2003).

Finally, *non-normative life events* also influence development. These are specific, atypical events that occur in a particular person's life at a time when such events do not happen to most people. For instance, the experience of Louise Brown, who grew up with the knowledge that she was the first person to be conceived using in vitro fertilization, constitutes a non-normative life event. In addition, children can create their own non-normative life events. For example, a high school girl who enters and wins a national science competition produces a non-normative life event for herself. In a very real sense, she is actively constructing her own environment, thereby participating in her own development.

Society's view of childhood and what is appropriate to ask of children has changed through the ages. These children worked full time in mines in the early 1900s.

REVIEW

1. Child development takes a scientific approach to development, and it considers _____ as well as change, in the lives of children and adolescents.
   - **a.** growth
   - **b.** stability
   - **c.** Both a and b
   - **d.** Neither a or b
2. The field of child development includes three major topics or approaches: physical development, _____ development, and social and personality development.
   - **a.** cultural
   - **b.** cognitive
   - **c.** artistic
   - **d.** language
3. Specialists in child development must take into consideration broad _____ factors and account for ethnic, racial, socioeconomic, and gender differences if they are to understand how people change and grow throughout the life span.
   - **a.** cultural
   - **b.** age
   - **c.** physical
   - **d.** ethnographic
4. Major social events have similar influences on members of a particular _____, a group of people born at around the same time in the same place.
   - **a.** race
   - **b.** generation
   - **c.** culture
   - **d.** cohort
5. _____ influences are similar for individuals in a particular age group, regardless of when or where they were raised.
   - **a.** History-graded
   - **b.** Sociocultural-graded
   - **c.** Age-graded
   - **d.** Non-normative

Answers can be found in the Answer Key on p. 543.

Children: Past, Present, and Future

Children have been the object of study from the time that humans have walked the planet. Parents are endlessly fascinated by their children, and the growth displayed throughout childhood and adolescence is a source of both curiosity and wonderment.

But it is relatively recently in the course of history that children have been studied from a scientific vantage point. Even a brief look at how the field of child development has progressed shows that there has been considerable growth in the way that children are viewed.

Early Views of Children

LO3 What were the earliest views of childhood and children?

Although it is hard to imagine, some scholars believe that there was a time when childhood didn't even exist, at least in the minds of adults. According to Philippe Ariès, who studied paintings and other forms of art, children in medieval Europe were not given any special status before 1600. Instead, they were viewed as miniature, somewhat imperfect adults. They were dressed in adult clothing and not treated specially in any significant way. Childhood was not seen as a stage qualitatively different from adulthood (Ariès, 1962; Acocella, 2003; Hutton, 2004).

Although the view that children during the Middle Ages were seen simply as miniature adults may be somewhat exaggerated—Ariès's arguments were based primarily on art depicting the European aristocracy, a very limited sample of Western culture—it is clear that childhood had a considerably different meaning than it does now. Moreover, the idea that childhood could be studied systematically did not take hold until later.

PHILOSOPHERS' PERSPECTIVES ON CHILDREN. During the 16th and 17th centuries, philosophers took the lead in thinking about the nature of childhood. For example, English philosopher John Locke (1632–1704) considered a child to be a *tabula rasa*—Latin for "blank slate." In this view, children entered the world with no specific characteristics or personalities. Instead, they were entirely shaped by their experiences as they grew up. As we'll see in the next chapter, this view was the precursor of the modern perspective known as behaviorism.

French philosopher Jean-Jacques Rousseau (1712–1778) had an entirely different view of the nature of children. He argued that children were *noble savages*, meaning that they were born with an innate sense of right and wrong and morality. Seeing humans as basically good, he argued that infants developed into admirable and worthy children and adults unless corrupted by negative circumstances in their lives. Rousseau also was one of the first observers of childhood to suggest that growth occurred in distinct, discontinuous stages that unfolded automatically—a concept that is reflected in some contemporary theories of child development that we'll discuss in the next chapter.

BABY BIOGRAPHIES. Among the first instances in which children were methodically studied came in the form of *baby biographies*, which were popular in the late 1700s in Germany. Observers—typically parents—tried to trace the growth of a single child, recording the physical and linguistic milestones achieved by their child.

But it was not until Charles Darwin, who developed the theory of evolution, that observation of children took a more systematic turn. Darwin was convinced that understanding the development of individuals within a species could help identify how the species itself had developed. He made baby biographies more scientifically respectable by producing one of his own, recording his son's development during his first year. A wave of baby biographies followed the publication of Darwin's book.

During medieval times in Europe, children were thought of as miniature, although imperfect, adults. This view of childhood was reflected in how children were dressed identically to adults.

Other historical trends helped propel the development of a new scientific discipline focusing on children. Scientists discovered the mechanisms behind conception, and geneticists were beginning to unlock the mysteries of heredity. Philosophers argued about the relative influences of nature (heredity) and nurture (influences in the environment).

FOCUS ON CHILDHOOD. As the adult labor pool increased, children were no longer needed as a source of inexpensive labor, paving the way for laws that protected children from exploitation. The advent of more universal education meant that children were separated from adults for more of the day, and educators sought to identify better ways of teaching children.

Advances in psychology led people to focus on the ways that childhood events influenced them during their adult lives. As a consequence of these significant social changes, child development became recognized as a field of its own.

The 20th Century: Child Development as a Discipline

LO4 How has childhood been regarded since the 20th century?

Several figures became central to the emerging field of child development. For example, Alfred Binet, a French psychologist, not only pioneered work on children's intelligence but also investigated memory and mental calculation. G. Stanley Hall pioneered the use of questionnaires to illuminate children's thinking and behavior. He also wrote