



International  
Edition

# Children and Their Development

Sixth Edition



PEARSON

Robert V. Kail

# Contents

Preface xv

---

## 1 The Science of Child Development 2

---

### 1.1 SETTING THE STAGE 3

Historical Views of Children and Childhood 4  
Origins of a New Science 4

### 1.2 FOUNDATIONAL THEORIES OF CHILD DEVELOPMENT 7

The Biological Perspective 8  
The Psychodynamic Perspective 9  
The Learning Perspective 10  
The Cognitive-Developmental Perspective 12  
The Contextual Perspective 13

### 1.3 THEMES IN CHILD-DEVELOPMENT RESEARCH 15

Early Development Is Related to Later Development but Not Perfectly 16  
Development Is Always Jointly Influenced by Heredity and Environment 16  
Children Influence Their Own Development 17  
Development in Different Domains is Connected 18

### 1.4 DOING CHILD-DEVELOPMENT RESEARCH 19

Measurement in Child-Development Research 20  
General Designs for Research 24  
Designs for Studying Age-Related Change 29  
Ethical Responsibilities 33  
Communicating Research Results 35

*See for Yourself 36 Summary 36  
Test Yourself 38 Key Terms 38*

---

## 2 Genetic Bases of Child Development 40

---

### 2.1 MECHANISMS OF HEREDITY 41

The Biology of Heredity 41  
Single Gene Inheritance 43



### CULTURAL INFLUENCES

*Why Do African Americans Inherit Sickle-Cell Disease? 45*

Genetic Disorders 46



### IMPROVING CHILDREN'S LIVES

*Genetic Counseling 47*

### 2.2 HEREDITY, ENVIRONMENT, AND DEVELOPMENT 50

Behavioral Genetics 50



### FOCUS ON RESEARCH

*Hereditary and Environmental Bases of Second-Language Learning 53*

Paths from Genes to Behavior 57

*Unifying Themes 61 See for Yourself 61*

*Summary 61 Test Yourself 62 Key Terms 63*

---

## 3 Prenatal Development, Birth, and the Newborn 64

---

### 3.1 FROM CONCEPTION TO BIRTH 65

Period of the Zygote (Weeks 1–2) 65  
Period of the Embryo (Weeks 3–8) 66  
Period of the Fetus (Weeks 9–38) 68



### IMPROVING CHILDREN'S LIVES

*Five Steps Toward a Healthy Baby 71*

### 3.2 INFLUENCES ON PRENATAL DEVELOPMENT 72

General Risk Factors 73



### SPOTLIGHT ON THEORIES

*A Theory of the Risks Associated with Teenage Motherhood 75*

Teratogens: Diseases, Drugs, and Environmental Hazards 77

How Teratogens Influence Prenatal Development 80


Prenatal Diagnosis and Treatment 83


### 3.3 HAPPY BIRTHDAY! 86

Labor and Delivery 87

Approaches to Childbirth 88


Adjusting to Parenthood 90  
 Birth Complications 91

 **FOCUS ON RESEARCH**  
*Impaired Memory Functions  
 in Low-Birth-Weight Babies 93*

 **CULTURAL INFLUENCES**  
*Infant Mortality 94*

**3.4 THE NEWBORN 96**

Assessing the Newborn 96  
 The Newborn's Reflexes 97  
 Newborn States 98


 **CHILD DEVELOPMENT  
 AND FAMILY POLICY**  
*Back to Sleep! 101*

Perception and Learning in the Newborn 102  
*Unifying Themes 102 See for Yourself 103  
 Summary 103 Test Yourself 104 Key Terms 105*

**4 Growth and Health 106**


**4.1 PHYSICAL GROWTH 107**

Features of Human Growth 108  
 Mechanisms of Physical Growth 110

 **IMPROVING CHILDREN'S LIVES**  
*What's the Best Food  
 for Babies? 111*

The Adolescent Growth Spurt and Puberty 113

 **CHILD DEVELOPMENT  
 AND FAMILY POLICY**  
*Preventing Osteoporosis 114*

 **CULTURAL INFLUENCES**  
*Adolescent Rites of Passage 116*

 **SPOTLIGHT ON THEORIES**  
*A Paternal Investment Theory of Girls' Pubertal  
 Timing 118*

**4.2 CHALLENGES TO HEALTHY  
 GROWTH 121**

Malnutrition 122  
 Eating Disorders: Anorexia and Bulimia 123  
 Obesity 124  
 Disease 125  
 Accidents 126

**4.3 THE DEVELOPING NERVOUS SYSTEM 127**

Organization of the Mature Brain 128  
 The Developing Brain 129


 **FOCUS ON RESEARCH**  
*Brain Specialization for Face Processing 131*

*Unifying Themes 135 See for Yourself 135  
 Summary 135 Test Yourself 137 Key Terms 137*


**5 Perceptual and Motor  
 Development 138**

**5.1 BASIC SENSORY AND PERCEPTUAL  
 PROCESSES 139**

Smell, Taste, and Touch 140  
 Hearing 141


 **IMPROVING CHILDREN'S LIVES**  
*Hearing Impairment in Infancy 142*

Seeing 142  
 Integrating Sensory Information 144

 **SPOTLIGHT ON THEORIES**  
*The Theory of Intersensory Redundancy 144*

**5.2 COMPLEX PERCEPTUAL  
 AND ATTENTIONAL PROCESSES 146**

Perceiving Objects 147


 **FOCUS ON RESEARCH**  
*Specialized Face Processing During  
 Infancy 152*

Attention 153  
 Attention Deficit Hyperactivity Disorder 155

 **CHILD DEVELOPMENT  
 AND FAMILY POLICY**  
*What's the Best Treatment for ADHD? 156*

**5.3 MOTOR DEVELOPMENT 158**

Locomotion 159

 **CULTURAL INFLUENCES**  
*Cultural Practices That Influence Motor  
 Development 161*

Fine-Motor Skills 163  
 Physical Fitness 165

*Unifying Themes 167 See for Yourself 167  
 Summary 167 Test Yourself 168 Key Terms 169*

## 6 Theories of Cognitive Development 170

### 6.1 SETTING THE STAGE: PIAGET'S THEORY 171

- Basic Principles of Piaget's Theory 172
- Stages of Cognitive Development 173
- Piaget's Contributions to Child Development 179

### 6.2 MODERN THEORIES OF COGNITIVE DEVELOPMENT 182

- The Sociocultural Perspective: Vygotsky's Theory 182



#### CULTURAL INFLUENCES

*How Do Parents in Different Cultures Scaffold Their Children's Learning?* 184

- Information Processing 186
- Core-Knowledge Theories 191

### 6.3 UNDERSTANDING IN CORE DOMAINS 193

- Understanding Objects and Their Properties 194



#### FOCUS ON RESEARCH

*Distinguishing Liquids from Solids* 196

- Understanding Living Things 197
- Understanding People 200



#### IMPROVING CHILDREN'S LIVES

*Theory of Mind in Autism* 202

- Unifying Themes* 205 *See for Yourself* 205
- Summary* 205 *Test Yourself* 206 *Key Terms* 207

## 7 Cognitive Processes and Academic Skills 208

### 7.1 MEMORY 209

- Origins of Memory 209
- Strategies for Remembering 211
- Knowledge and Memory 213



#### SPOTLIGHT ON THEORIES

*Fuzzy Trace Theory* 214



#### CHILD DEVELOPMENT AND FAMILY POLICY

*Interviewing Children Effectively* 218

### 7.2 PROBLEM SOLVING 220

- Developmental Trends in Solving Problems 220

- Features of Children's and Adolescents' Problem Solving 221
- Scientific Problem Solving 225



#### FOCUS ON RESEARCH

*Developmental Change in Sensitivity to Sample Size* 226

### 7.3 ACADEMIC SKILLS 228

- Reading 229



#### IMPROVING CHILDREN'S LIVES

*Rhyme Is Sublime Because Sounds Abounds* 230

- Writing 234

- Knowing and Using Numbers 236



#### CULTURAL INFLUENCES

*Fifth Grade in Taiwan* 241

- Unifying Themes* 243 *See for Yourself* 243
- Summary* 244 *Test Yourself* 245 *Key Terms* 245

## 8 Intelligence and Individual Differences in Cognition 246

### 8.1 WHAT IS INTELLIGENCE? 247

- Psychometric Theories 247
- Gardner's Theory of Multiple Intelligences 249
- Sternberg's Theory of Successful Intelligence 251



#### SPOTLIGHT ON THEORIES

*The Theory of Successful Intelligence* 251



#### CULTURAL INFLUENCES

*How Culture Defines What Is Intelligent* 253

### 8.2 MEASURING INTELLIGENCE 254

- Binet and the Development of Intelligence Testing 255
- What Do IQ Scores Predict? 258
- Hereditary and Environmental Factors 259



#### CHILD DEVELOPMENT AND FAMILY POLICY

*Providing Children with a Head Start for School* 261

- Impact of Ethnicity and Socioeconomic Status 262

### 8.3 SPECIAL CHILDREN, SPECIAL NEEDS 265

- Gifted and Creative Children 265

**IMPROVING CHILDREN'S LIVES**

Fostering Creativity 267

Children with Disability 267

**FOCUS ON RESEARCH***Phonological Representations in Children with Developmental Dyslexia* 269

Unifying Themes 272 *See for Yourself* 272  
 Summary 273 *Test Yourself* 274 *Key Terms* 275

## 9 Language and Communication 276

### 9.1 THE ROAD TO SPEECH 277

Elements of Language 277

Perceiving Speech 278

**CHILD DEVELOPMENT AND FAMILY POLICY***Are Cochlear Implants Effective for Young Children?* 281

First Steps to Speech 282

### 9.2 LEARNING THE MEANINGS OF WORDS 284

Understanding Words as Symbols 284

Fast Mapping Meanings to Words 285

**SPOTLIGHT ON THEORIES***A Shape-Bias Theory of Word Learning* 287

Individual Differences in Word Learning 289

Encouraging Word Learning 290

**FOCUS ON RESEARCH***Do Infants Learn Words from Watching Infant-Oriented Media?* 291**CULTURAL INFLUENCES***Growing Up Bilingual* 293

Beyond Words: Other Symbols 294

### 9.3 SPEAKING IN SENTENCES 296

From Two-Word Speech to Complex Sentences 297

How Do Children Acquire Grammar? 299

**IMPROVING CHILDREN'S LIVES***Promoting Language Development* 303

### 9.4 USING LANGUAGE TO COMMUNICATE 304

Taking Turns 304

Speaking Effectively 305

Listening Well 307

Unifying Themes 309 *See for Yourself* 309  
 Summary 309 *Test Yourself* 310 *Key Terms* 311

## 10 Emotional Development 312

### 10.1 EMERGING EMOTIONS 313

The Function of Emotions 313

Experiencing and Expressing Emotions 314

**IMPROVING CHILDREN'S LIVES***"But I Don't Want to Go to School!"* 317

Recognizing and Using Others' Emotions 318

Regulating Emotions 320

### 10.2 TEMPERAMENT 322

What Is Temperament? 323

**SPOTLIGHT ON THEORIES***A Theory of the Structure of Temperament in Infancy* 323

Hereditary and Environmental Contributions to Temperament 325

**CULTURAL INFLUENCES***Why Is Yoshimi's Son So Tough?* 325

Stability of Temperament 326

Temperament and Other Aspects of Development 327

**FOCUS ON RESEARCH***Temperament Influences Helping Others* 328

### 10.3 ATTACHMENT 330

The Growth of Attachment 331

The Quality of Attachment 333

**CHILD DEVELOPMENT AND FAMILY POLICY***Determining Guidelines for Child Care for Infants and Toddlers* 338

Unifying Themes 339 *See for Yourself* 339  
 Summary 339 *Test Yourself* 340 *Key Terms* 341

## 11 Understanding Self and Others 342

### 11.1 WHO AM I? SELF-CONCEPT 343

Origins of Self-Recognition 344

The Evolving Self-Concept 345

The Search for Identity 347

**CULTURAL INFLUENCES***Dea's Ethnic Identity* 349

**11.2 SELF-ESTEEM** 353

- Developmental Change in Self-Esteem 354
- Variations in Self-Esteem Associated with Ethnicity and Culture 356
- Sources of Self-Esteem 356

**IMPROVING CHILDREN'S LIVES***Self-Esteem in Gifted Classes* 357

Low Self-Esteem: Cause or Consequence? 358

**11.3 UNDERSTANDING OTHERS** 360

- Describing Others 360
- Understanding What Others Think 361
- Prejudice 363

**FOCUS ON RESEARCH***Developmental Profiles for Implicit and Explicit Racial Bias* 364**SPOTLIGHT ON THEORIES***Developmental Intergroup Theory* 366**CHILD DEVELOPMENT AND FAMILY POLICY***Ending Segregated Schools* 368

*Unifying Themes* 369 *See for Yourself* 369  
*Summary* 370 *Test Yourself* 371 *Key Terms* 371

---

**12 Moral Understanding and Behavior** 372

---

**12.1 SELF-CONTROL** 373

- Beginnings of Self-Control 374
- Influences on Self-Control 375
- Improving Children's Self-Control 376

**FOCUS ON RESEARCH***Engaging Preschool Children to Help Them Delay Gratification* 377**12.2 REASONING ABOUT MORAL ISSUES** 378

- Piaget's Views 379
- Kohlberg's Theory 380
- Beyond Kohlberg's Theory 383

**CULTURAL INFLUENCES***Similarity in Structure of Domains of Social Judgment but Differences in Content* 384

Promoting Moral Reasoning 386

**12.3 HELPING OTHERS** 387

Development of Prosocial Behavior 388

- Skills Underlying Prosocial Behavior 388
- Situational Influences 389
- The Contribution of Heredity 390
- Socializing Prosocial Behavior 391

**12.4 AGGRESSION** 393

- Change and Stability 393
- Roots of Aggressive Behavior 395

**SPOTLIGHT ON THEORIES***Social-Information-Processing Theory and Children's Aggressive Behavior* 398

Victims of Aggression 400

*Unifying Themes* 403 *See for Yourself* 403  
*Summary* 403 *Test Yourself* 405 *Key Terms* 405

---

**13 Gender and Development** 406

---

**13.1 GENDER STEREOTYPES** 407

- How Do We View Men and Women? 407
- Learning Gender Stereotypes 409

**FOCUS ON RESEARCH***Reasoning About Gender-Related Properties* 409**13.2 DIFFERENCES RELATED TO GENDER** 412

- Differences in Physical Development and Behavior 412
- Differences in Intellectual Abilities and Achievement 414

**CULTURAL INFLUENCES***A Cross-Cultural Look at Gender Differences in Math* 416

- Differences in Personality and Social Behavior 417
- Frank Talk About Gender Differences 419

**13.3 GENDER IDENTITY** 421

- The Socializing Influences of People and the Media 421
- Cognitive Theories of Gender Identity 424

**SPOTLIGHT ON THEORIES***Gender-Schema Theory* 425

Biological Influences 427

**13.4 GENDER ROLES IN TRANSITION** 428

- Emerging Gender Roles 428
- Beyond Traditional Gender Roles 429

