



Fifth
Canadian
Edition

DEVELOPMENTAL PSYCHOLOGY

**INFANCY AND
CHILDHOOD**

Shaffer
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Developmental Psychology

Infancy and Childhood

FIFTH CANADIAN EDITION

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

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Brief Contents

Preface xiii

PART I	THEORY AND RESEARCH IN THE DEVELOPMENTAL SCIENCES
Chapter 1	Introduction to Developmental Psychology and Its Research Strategies 1
Chapter 2	Theories of Human Development 36
PART II	FOUNDATIONS OF DEVELOPMENT
Chapter 3	Hereditary Influences on Development 68
Chapter 4	Prenatal Development 98
Chapter 5	Birth and the Newborn's Readiness for Life 123
Chapter 6	Physical Development: The Brain, Body, Motor Skills, and the Beginnings of Sexual Development 145
PART III	LANGUAGE, LEARNING, AND COGNITIVE DEVELOPMENT
Chapter 7	Early Cognitive Foundations: Sensation, Perception, and Learning 178
Chapter 8	Cognitive Development: Piaget's Theory, Case's Neo-Piagetian Theory, and Vygotsky's Sociocultural Viewpoint 218
Chapter 9	Cognitive Development: Information-Processing Perspectives and Connectionism 264
Chapter 10	Intelligence: Measuring Mental Performance 307
Chapter 11	Development of Language and Communication Skills 348
PART IV	SOCIAL AND PERSONALITY DEVELOPMENT
Chapter 12	Emotional Development, Temperament, and Attachment 394
Chapter 13	Development of the Self and Social Cognition 429
Chapter 14	Sex Differences and Similarities, and Gender-Role Development 463
Chapter 15	Moral Development and Aggression 498
PART V	THE ECOLOGY OF DEVELOPMENT
Chapter 16	The Family 538
Chapter 17	Beyond the Family Context: Peers, Schools, and Media 576
	Glossary G-1
	References R-1
	Name Index I-1
	Subject Index I-23

Contents

Preface xiii

PART I THEORY AND RESEARCH IN THE DEVELOPMENTAL SCIENCES

CHAPTER 1

Introduction to Developmental Psychology and Its Research Strategies 1

- Introduction to Developmental Psychology 1
 - What Is Development? 2
- The Scientific Study of Development and Its Origins 6
 - Early Philosophical Perspectives on Childhood 6
 - Children as Subjects of Study: Baby Biographies and Diaries 7
- Research Methods in Developmental Psychology 8
 - Gathering Data: Basic Fact-Finding Strategies 8
 - Detecting Relationships: Correlational and Experimental Designs 16
- Research Strategies in Developmental Psychology 23
 - Research Designs for Studying Development 23
- Ethical Considerations in Developmental Research 30
 - What Makes a Research Study Ethical or Unethical? 31
- Postscript: On Becoming a Wise User of Developmental Research 32
- Summary 33
- Key Terms 35

CHAPTER 2

Theories of Human Development 36

- The Nature of Scientific Theories 36
- Psychoanalytic Theories 38
 - Freud's Psychosexual Theory 38
 - Contributions and Criticisms of Freud's Theory 39
 - Erikson's Theory of Psychosocial Development 40
 - Contributions and Criticisms of Erikson's Theory 40
 - Psychoanalytic Theory beyond Freud and Erikson 41

- Learning Theories 42
 - Watson's Behaviourism 42
 - Skinner's Operant Learning Theory 42
 - Bandura's Cognitive Social Learning Theory 43
 - **BOX 2.1 FOCUS ON RESEARCH:** An Example of Observational Learning 44
 - Contributions and Criticisms of Learning Theories 45
- Cognitive-Developmental Theories 47
 - Piaget's View of Intelligence and Intellectual Growth 47
 - Contributions and Criticisms of Piaget's Viewpoint 48
- Sociocultural Theories 49
 - Contributions and Criticisms of Vygotsky's Viewpoint 50
- Information-Processing Theories 50
 - Contributions and Criticisms of the Information-Processing Viewpoint 51
- Ethological and Evolutionary Theories 52
 - Assumptions of Classical Ethology 52
 - Ethology and Human Development 52
 - Evolutionary Theory 53
 - Contributions and Criticisms of the Ethological and Evolutionary Viewpoints 54
- Ecological Systems Theory 55
 - Contexts for Development 55
 - Family and the Ecological Systems Theory 57
 - Contributions and Criticisms of the Ecological Systems Theory 58
- Themes in the Study of Human Development: Questions and Controversies 59
 - The Nature/Nurture Issue 59
 - The Active/Passive Issue 60
 - The Continuity/Discontinuity Issue 60
 - The Holistic Nature of Development Issue 61
- Theories and World Views 62
 - The Developmental Systems View 63
- Summary 65
- Key Terms 66

PART II FOUNDATIONS OF DEVELOPMENT

CHAPTER 3

Hereditary Influences on Development 68

- Principles of Hereditary Transmission 68
 - The Genetic Material 69
 - Growth of the Zygote and Production of Body Cells 70
 - Germlines 70
 - Multiple Births 71
 - Male or Female? 72
 - What Do Genes Do? 72
 - How Important Are Environmental Influences? 73
 - How Do Phenotypes Develop through Genotypes? 73
 - **BOX 3.1 DEVELOPMENTAL ISSUES:** Examples of Dominant and Recessive Traits in Human Heredity 75
 - Polygenic Inheritance 76
 - The Role of Epigenetics 76
- Hereditary Disorders 77
 - Chromosomal Abnormalities 78
 - Genetic Abnormalities 80
 - Predicting, Detecting, and Treating Hereditary Disorders 81
 - **BOX 3.2 CURRENT CONTROVERSIES:** Ethical Issues Surrounding Treatments for Hereditary Disorders 84
- Hereditary Influences on Behaviour 86
 - Methods of Studying Hereditary Influences 86
 - Estimating the Contribution of Genes and Environment 86
 - Hereditary Contributions to Personality 89
 - Hereditary Contributions to Behaviour Disorders and Mental Illness 89
- Theories of Heredity and Environment Interactions in Development 90
 - The Canalization Principle 90
 - The Range-of-Reaction Principle 91
 - From Genotype to Environment 91
 - How Do Genotype/Environment Interactions Influence Development? 92
- Contributions and Criticisms of the Behavioural Genetics Approach 94
- Applying Developmental Themes to Hereditary Influences on Development 95
- Summary 95
- Key Terms 97

CHAPTER 4

Prenatal Development 98

- From Conception to Birth 99
 - The Period of the Zygote 99

- The Period of the Embryo 101
- The Period of the Fetus 101

Environmental Influences on Prenatal Development 105

- Teratogens 105
 - **BOX 4.1 DEVELOPMENTAL ISSUES:** Teratogenic Effects of Sexually Transmitted Diseases/Infections 108
 - **BOX 4.2 THE INSIDE TRACK:** Joanne Rovet/Kelly Nash 112
- Environmental Hazards 114
- Maternal Characteristics 116
- Prevention of Birth Defects 120
- Applying Developmental Themes to Prenatal Development 120

Summary 122

Key Terms 122

CHAPTER 5

Birth and the Newborn's Readiness for Life 123

- Childbirth and the Perinatal Environment 123
 - The Birth Process 123
 - The Baby's Experience 124
 - Labour and Delivery Medication 126
 - The Social Environment Surrounding Birth 128
 - **BOX 5.1 THE INSIDE TRACK:** Ann Bigelow 130
- Birth Complications 130
 - Anoxia 130
 - Low Birth Weight 131
 - Reproductive Risk and Capacity for Recovery 134
 - Applying Developmental Themes to Birth 135
- The Newborn's Readiness for Life 136
 - Newborn Reflexes 137
 - Infant States 138
 - Developmental Changes in Infant States 139
 - **BOX 5.2 DEVELOPMENTAL ISSUES:** Sudden Infant Death Syndrome 140
 - **BOX 5.3 APPLYING DEVELOPMENTAL RESEARCH:** Methods of Soothing a Fussy Baby 142
- Summary 143
- Key Terms 144

CHAPTER 6

Physical Development: The Brain, Body, Motor Skills, and the Beginnings of Sexual Development 145

- An Overview of Maturation and Growth 146
 - Changes in Height and Weight 146
 - Changes in Body Proportions 147
 - Skeletal Development 148

Muscular Development	148
Variations in Physical Development	148
Development of the Brain	149
Neural Development and Plasticity	149
■ BOX 6.1 THE INSIDE TRACK: Dr. Sid Segalowitz	150
■ BOX 6.2 THE INSIDE TRACK: Bryan Kolb	152
Brain Differentiation and Growth	153
Motor Development	156
Basic Trends in Locomotor Development	157
Fine Motor Development	160
Psychological Implications of Early Motor Development	162
Beyond Infancy: Motor Development in Childhood	163
■ BOX 6.3 APPLYING RESEARCH TO YOUR LIFE: Exercise: The Key to a Healthy Childhood	164
The Onset of Puberty: The Early Beginnings of the Physical Transition from Child to Adolescent	165
Sexual Maturation in Girls	165
Sexual Maturation in Boys	166
Individual Differences in and Sexual Maturation: Early Onset	166
Secular Trends—Are We Maturing Earlier?	166
Does Timing of Puberty Matter?	167
Causes and Correlates of Physical Development	168
Biological Mechanisms	168
Environmental Influences	169
Applying Developmental Themes to Physical Development	173
Summary	175
Key Terms	176

PART III LANGUAGE, LEARNING, AND COGNITIVE DEVELOPMENT

CHAPTER 7 Early Cognitive Foundations: Sensation, Perception, and Learning 178

Early Controversies about Sensory and Perceptual Development	179
Nature versus Nurture	179
Enrichment versus Differentiation	179
Research Methods Used to Study the Infant's Sensory and Perceptual Experiences	180
The Preference Method	180
The Habituation Method	180
The High-Amplitude Sucking Method	181
The Evoked Potentials Method	182
Brain Imaging Techniques	182
Infant Sensory Capabilities	183
Hearing	183

■ BOX 7.1 FOCUS ON RESEARCH: Causes and Consequences of Hearing Loss	184
Taste and Smell	185
Touch, Temperature, and Pain	186
Vision	187
Visual Perception in Infancy	189
Perception of Patterns and Forms	189
■ BOX 7.2 THE INSIDE TRACK: Daphne Maurer	192
Perception of Three-Dimensional Space	193
Intermodal Perception	197
Are the Senses Integrated at Birth?	197
Development of Intermodal Perception	198
Explaining Intermodal Perception	199
Infant Perception in Perspective—And a Look Ahead	200
Perceptual Learning in Childhood: Gibson's Differentiation Theory	200
Cultural Influences on Perception	201
Basic Learning Processes	203
Habituation: Early Evidence of Information Processing and Memory	203
Classical Conditioning	204
Operant (or Instrumental) Conditioning	206
Operant Conditioning in Infancy	208
Observational Learning	210
■ BOX 7.3 APPLYING DEVELOPMENTAL RESEARCH: Corporal Punishment—Cultural Ideals and Alternatives	211
Applying Developmental Themes to Infant Development, Perception, and Learning	214
Summary	215
Key Terms	217

CHAPTER 8 Cognitive Development: Piaget's Theory, Case's Neo-Piagetian Theory, and Vygotsky's Sociocultural Viewpoint 218

Piaget's Theory of Cognitive Development	219
What Is Intelligence?	219
How We Gain Knowledge: Cognitive Schemes and Cognitive Processes	220
Piaget's Stages of Cognitive Development	221
The Sensorimotor Stage (Birth to 2 Years)	221
■ BOX 8.1 DEVELOPMENTAL ISSUES: Why Infants Know More about Objects than Piaget Assumed	227
The Preoperational Stage (2 to 7 Years) and the Emergence of Symbolic Thought	230
■ BOX 8.2 DEVELOPMENTAL ISSUES: Play Is Serious Business	232
■ BOX 8.3 THE INSIDE TRACK: Kang Lee	240
■ BOX 8.4 FOCUS ON RESEARCH: Is Theory of Mind Biologically Programmed? The Special Case of Autism Spectrum Disorder	241

- The Concrete-Operational Stage (7 to 11 Years) 242
- The Formal-Operational Stage (11 to 12 Years and Beyond) 244
- An Evaluation of Piaget’s Theory 246
 - Piaget’s Contributions 246
 - Challenges to Piaget 247
- Case’s Neo-Piagetian Theory 248
- Vygotsky’s Sociocultural Perspective 250
 - The Role of Culture in Intellectual Development 250
 - The Social Origins of Early Cognitive Competencies 252
 - Implications for Education 255
 - The Role of Language in Cognitive Development 256
 - Vygotsky in Perspective: Summary and Evaluation 257
- Applying Developmental Themes to Piaget’s and Vygotsky’s Theories 260
- Summing Up 261
- Summary 261
- Key Terms 262

CHAPTER 9

Cognitive Development: Information-Processing Perspectives and Connectionism 264

- Information Flow and the Multistore Model 265
- Cognitive Processes and the Multistore Model 266
- Developmental Differences in “Hardware”: Information-Processing Capacity 267
 - Development of the Short-Term Store 267
 - Knowledge Base and Memory Development 269
- Developmental Differences in “Software”: Strategies 270
 - Rehearsal 271
 - Organization 272
 - Elaboration 272
 - Production and Utilization Deficiencies 273
 - Multiple Strategy and Variable Strategy Use 275
- The Development of Metacognition and Executive Control Processes 276
 - Knowledge and Reasoning 277
 - **BOX 9.1 THE INSIDE TRACK:** Ori Friedman 278
- Retention and the Development of Attention 279
 - Changes in Attention Span 279
 - **BOX 9.2 THE INSIDE TRACK:** Kimberly Schonert-Reichl 280
 - Development of Planful Attentional Strategies 280
 - Selective Attention: Ignoring Information That Is Clearly Irrelevant 281

- Cognitive Inhibition: Dismissing Irrelevant Information 281
- Meta-attention: What Do Children Know about Attention? 282

Alternative Models of Memory: Fuzzy Traces and Scripts 283

- Fuzzy-Trace Theory 283
- Schemas 284
- The Development of Event Memory 286
 - Origins of Event Memory 286
 - **BOX 9.3 APPLYING RESEARCH TO YOUR LIFE:** What Happened to Our Early Childhood Memories? 287
 - The Social Construction of Autobiographical Memories 288
 - Summing Up 289

- Children as Eyewitnesses 290
 - How Suggestible Are Child Witnesses? 291
 - Implications for Legal Testimony 292

The Development of Analogical Reasoning 292

- The Development of Number and Arithmetic Skills 294
 - Counting and Arithmetic Strategies 294
 - **BOX 9.4 THE INSIDE TRACK:** Jeff Bisanz 296

Evaluating the Information-Processing Perspective 299

- **BOX 9.5 APPLYING RESEARCH TO YOUR LIFE:** Some Educational Implications of Research on Attention and Memory 300

Connectionist Approaches to Cognitive Development 301

- The Origins of Connectionism 301
- How Are Networks Created? 301
- How Connectionist Networks Work 302
- Connectionism and Development 302

Applying Developmental Themes to Information-Processing Perspectives 303

- Summary 304
- Key Terms 306

CHAPTER 10

Intelligence: Measuring Mental Performance 307

- What Is Intelligence? 308
 - Psychometric Views of Intelligence 308
 - The Modern Information-Processing Viewpoint 312
 - Gardner’s Theory of Multiple Intelligences 314
- How Is Intelligence Measured? 315
 - The Wechsler Scales 316
 - **BOX 10.1 CULTURAL INFLUENCES:** Making American Tests Valid in Canada 317
 - **BOX 10.2 THE INSIDE TRACK:** Donald H. Saklofske 318
 - Distribution of IQ Scores 318

- Group Tests of Mental Performance 319
- Newer Approaches to Intelligence Testing 319
- Assessing Infant Intelligence 319
- What Do Intelligence Tests Predict? 322
 - IQ as a Predictor of Scholastic Achievement 322
 - IQ as a Predictor of Health, Adjustment, and Life Satisfaction 323
- Factors That Influence IQ Scores 326
 - The Evidence for Heredity 326
 - The Evidence for Environment 327
- Social and Cultural Correlates of Intellectual Performance 328
 - Home Environment and IQ 328
 - Social Class, Culture, Race, and Ethnic Differences in IQ 331
 - Why Do Groups Differ in Intellectual Performance? 332
- Improving Cognitive Performance through Compensatory Education 337
 - Long-Term Follow-Ups 338
 - The Importance of Parental Involvement 338
 - The Importance of Intervening Early 339
 - **BOX 10.3 APPLYING DEVELOPMENTAL RESEARCH:** An Effective Compensatory Intervention for Families 339
- Creativity and Special Talents 340
 - What Is Creativity? 340
 - The Psychometric Perspective 341
 - The Multicomponent (or Confluence) Perspective 341
 - Sternberg and Lubart's Investment Theory 342
- Applying Developmental Themes to Intelligence and Creativity 345
- Summary 345
- Key Terms 347

CHAPTER 11

Development of Language and Communication Skills 348

- The Five Components of Language 349
 - Phonology 349
 - Morphology 349
 - Semantics 349
 - Syntax 350
 - Pragmatics 350
- Theories of Language Development 350
 - The Learning (or Empiricist) Perspective 351
 - The Nativist Perspective 352
 - **BOX 11.1 FOCUS ON RESEARCH:** On the "Invention" of Language by Children 355
 - The Interactionist Perspective 356
- The Prelinguistic Period: Before Language 361
 - Early Reactions to Speech 361

- Producing Sounds: The Infant's Prelinguistic Vocalizations 362
- What Do Prelinguistic Infants Know about Language and Communication? 363
- The Holophrastic Period: One Word at a Time 365
 - Early Semantics: Building a Vocabulary 365
 - **BOX 11.2 THE INSIDE TRACK:** Janet F. Werker 366
 - Attaching Meaning to Words 367
 - When a Word Is More than a Word 371
- The Telegraphic Period: From Holophrases to Simple Sentences 371
 - A Semantic Analysis of Telegraphic Speech 372
 - The Pragmatics of Early Speech 373
 - **BOX 11.3 APPLYING RESEARCH TO YOUR LIFE:** Learning a Gestural Language 374
- Language Learning during the Preschool Period 375
 - Grammatical Development 376
 - Semantic Development 378
 - Development of Pragmatics and Communication Skills 379
- Language Learning during Middle Childhood 380
 - Later Syntactic Development 381
 - Semantics and Metalinguistic Awareness 381
 - Further Development of Communication Skills 382
- Bilingualism: Learning More than One Language 385
 - **BOX 11.4 THE INSIDE TRACK:** Johanne Paradis 387
 - **BOX 11.5 THE INSIDE TRACK:** Ellen Bialystok 388
- Applying Developmental Themes to Language Acquisition 390
- Summary 391
- Key Terms 392

PART IV SOCIAL AND PERSONALITY DEVELOPMENT

CHAPTER 12

Emotional Development, Temperament, and Attachment 394

- Emotional Development 394
 - Displaying Emotions: The Development (and Control) of Emotional Expressions 395
 - Recognizing and Interpreting Emotions 399
 - Emotions and Early Social Development 401
- Temperament and Development 402
 - Hereditary and Environmental Influences on Temperament 403

- Stability of Temperament 405
- Early Temperamental Profiles and Later Development 406
 - **BOX 12.1 THE INSIDE TRACK:** Elizabeth J. Hayden 406

- Attachment and Development 409
 - Attachments as Reciprocal Relationships 409
 - How Do Infants Become Attached? 410
 - Individual Differences in Attachment Quality 414
 - Factors That Influence Attachment Security 418
 - Attachment and Later Development 421
 - **BOX 12.2 THE INSIDE TRACK:** Ellen Moss 424
- Applying Developmental Themes to Emotional Development, Temperament, and Attachment 425
- Summary 426
- Key Terms 427

CHAPTER 13 Development of the Self and Social Cognition 429

- Development of the Self-Concept 429
 - Self-Differentiation in Infancy 430
 - Self-Recognition in Infancy 430
 - Contributors to Self-Recognition 432
 - Social and Emotional Consequences of Self-Recognition 433
 - “Who Am I?” Responses of Preschool Children 434
 - Conceptions of Self in Middle Childhood 434
 - Who Am I to Be? Identity as an Extension of Self-Concept 436
- Self-Esteem: The Evaluative Component of Self 436
 - Origins and Development of Self-Esteem 436
 - **BOX 13.1 THE INSIDE TRACK:** Shelley Hymel 439
 - **BOX 13.2 THE INSIDE TRACK:** Joanne Cummings 439
 - Social Contributors to Self-Esteem 440
- Development of Achievement Motivation and Academic Self-Concept 442
 - Early Origins of Achievement Motivation 442
 - Achievement Motivation during Middle Childhood 443
 - Beyond Achievement Motivation: Development of Achievement Attributions 447
- The Other Side of Social Cognition: Knowing about Others 452
 - Age Trends in Person Perception 452
 - **BOX 13.3 DEVELOPMENTAL ISSUES:** Racial Categorization and Racism in Young Children 453
 - Theories of Social-Cognitive Development 455
- Applying Developmental Themes to the Development of the Self and Social Cognition 459
- Summary 460
- Key Terms 461

CHAPTER 14 Sex Differences and Similarities, and Gender-Role Development 463

- Defining Sex and Gender 464
- Categorizing Males and Females: Gender-Role Standards 464
 - **BOX 14.1 DEVELOPMENTAL ISSUES:** What Traits Characterize Males and Females? 466
- Some Facts and Fictions about Sex Differences 466
 - Actual Psychological Differences between the Sexes 466
 - Cultural Myths 469
 - Do Cultural Myths Contribute to Sex Differences in Ability (and Vocational Opportunity)? 470
- Developmental Trends in Gender Typing 472
 - Development of Gender Identity 472
 - Development of Gender-Role Stereotypes 473
 - **BOX 14.2 THE INSIDE TRACK:** Lisa Serbin 474
 - Development of Gender-Typed Behaviour 475
- Theories of Gender Typing and Gender-Role Development 478
 - Evolutionary Theory 478
 - A Biosocial Overview of Gender Differentiation and Development 479
 - **BOX 14.3 FOCUS ON RESEARCH:** Is Biology Destiny? 482
 - Social-Learning Theory 484
 - Kohlberg’s Cognitive-Developmental Theory 486
 - Gender Schema Theory 487
 - An Integrative Theory 488
- Psychological Androgyny: A Prescription for the 21st Century? 489
 - Do Androgynous People Really Exist? 490
 - Are There Advantages to Being Androgynous? 491
 - Applications: On Changing Gender-Role Attitudes and Behaviour 492
 - **BOX 14.4 APPLYING RESEARCH TO YOUR LIFE:** Combating Gender Stereotypes with Cognitive Interventions 494
- Applying Developmental Themes to Sex Differences and Gender-Role Development 495
- Summary 495
- Key Terms 496

CHAPTER 15 Moral Development and Aggression 498

- Defining the Moral Domain 499
 - Moral Foundations Theory 499
 - Turiel’s Social Domain Theory 500
 - The Anthropologist View 501
- Evolutionary Roots of Morality in Young Children 502
 - Empathy and Compassion 502
 - Social Preference for Helpfulness 503
 - Prosocial Helping 503

Beyond Nature—Cultural Influences on Sympathy and Prosocial Behaviour	504
Rule Internalization in the Context of Close Relationships	505
Positive Reinforcement in the Context of Close Relationships	506
■ BOX 15.1 APPLYING RESEARCH TO YOUR LIFE: How Should I Discipline My Children?	509
Social-Modelling Influences	510
Moral Reasoning Development	511
Piaget's Theory of Moral Development	511
Updates to Piaget's Theory	513
Kohlberg's Theory of Moral Development	516
Empirical Support for Kohlberg's Theory	519
Criticisms of Kohlberg's Approach	522
The Development of Aggression	524
Aggressive Behaviour in Infancy and Childhood	525
Aggressiveness as a Trait: How Stable Is It?	526
Sex Differences in Aggressive Behaviour	527
Aggression as a Behavioural Problem	528
Dodge's Social Information-Processing Theory of Aggression	528
■ BOX 15.2 THE INSIDE TRACK: Tina Malti	530
Social and Cultural Influences on Aggression	530
Coercive Home Environments: Breeding Grounds for Aggression	531
Methods of Controlling Aggression in Young Children	532
Applying Developmental Themes to Moral Development and Aggression	535
Summary	535
Key Terms	536

PART V THE ECOLOGY OF DEVELOPMENT

CHAPTER 16 The Family 538

Understanding the Family	538
The Family as a Social System	539
Families Are Developing Systems	540
Parental Socialization during Childhood	543
Two Major Dimensions of Parenting	544
Four Patterns of Parenting	544
Social Class and Ethnic Variations in Child Rearing	548
The Influence of Siblings and Sibling Relationships	551
Changes in the Family System when a New Baby Arrives	551
Sibling Relationships over the Course of Childhood	551

■ BOX 16.1 THE INSIDE TRACK: Hildy Ross	552
Positive Contributions of Sibling Relationships	553
Characteristics of Only Children	554
Diversity in Family Life	555
Adoptive Families	556
Donor Insemination (DI) Families	556
Gay and Lesbian Families	557
Family Conflict and Divorce	558
Remarriage and Blended Families	560
■ BOX 16.2 APPLYING DEVELOPMENTAL RESEARCH: Smoothing the Rocky Road to Recovery from a Divorce	561
Down the Hidden Side of Family Life: The Problem of Child Abuse	564
How Prevalent Is Child Abuse and Neglect?	564
Is There a Typical Profile of an Abuser?	565
Who Is Abused?	566
Consequences of Abuse and Neglect	568
■ BOX 16.3 THE INSIDE TRACK: David Wolfe	569
How Can We Reduce the Prevalence of Abuse and Neglect? What Works?	570
Applying Developmental Themes to Family Life, Parenting, and Siblings	572
Summary	573
Key Terms	574

CHAPTER 17 Beyond the Family Context: Peers, Schools, and Media 576

Peers as Agents of Socialization	576
Who Is a Peer and What Functions Do Peers Serve?	577
The Development of Peer Sociability	578
Peer Acceptance and Popularity	582
Children and Their Friends	585
■ BOX 17.1 THE INSIDE TRACK: William Bukowski	585
■ BOX 17.2 DEVELOPMENTAL ISSUES: A Longitudinal Analysis of the Benefits of Chumships	588
■ BOX 17.3 APPLYING DEVELOPMENTAL RESEARCH: On Improving the Social Skills of Unpopular Children	589
Parents and Peers as Influence Agents	590
Increasing Conformity to Peers	590
School as a Socialization Agent	591
How Well Educated Are Our Children? A Cross-Cultural Comparison	591
■ BOX 17.4 APPLYING RESEARCH TO YOUR LIFE: Should Preschoolers Attend School?	592
Determinants of Effective Schooling	596
Do Our Schools Meet the Needs of All of Our Children?	599

Effects of Media Technologies on Child Development 602	Summary 611
Development of Media Literacy 603	Key Terms 613
Some Potentially Undesirable Effects of Screen Media Technologies 604	Glossary G-1
Some Desirable Developmental Outcomes from Screen Media Technologies 606	References R-1
Computer Technologies and Cognitive Development 608	Name Index I-1
The Added Impact of the Internet 608	Subject Index I-23
Applying Developmental Themes to Extrafamilial Contextual Forces in Child Development 610	

Preface

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

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

Philosophy

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

We Believe in Theoretical Eclecticism

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

The Best Information about Human Development Comes from Systematic Research

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

We Believe in a Strong Process Orientation

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

We Believe in a Strong Contextual Orientation

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

Human Development Is a Holistic Process

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

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

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

Organization

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

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

Content

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

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

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

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

■ New to the Fifth Canadian Edition

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

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

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

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

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

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

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

Chapter 1: Introduction to Developmental Psychology and Its Research Strategies

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

Chapter 2: Theories of Human Development

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

Chapter 3: Hereditary Influences on Development

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

Chapter 4: Prenatal Development

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

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

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

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

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

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

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

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

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

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

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

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

Chapter 10: Intelligence: Measuring Mental Performance

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

Chapter 11: Development of Language and Communication Skills

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

Chapter 12: Emotional Development, Temperament, and Attachment

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

Chapter 13: Development of the Self and Social Cognition

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

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

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

Chapter 15: Moral Development and Aggression

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

Chapter 16: The Family

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

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

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

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

■ Writing Style

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

■ Special Features

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

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

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

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

Supplementary Aids and Ancillaries



Instructor Resources

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

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

NETA Test Bank

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

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



NETA PowerPoint

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

Image Library

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

MindTap

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



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



Student Ancillaries

MindTap

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- Flashcards are pre-populated to provide you with a jump start for review—or you can create your own.
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- Self-quizzing allows you to assess your understanding.

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Acknowledgments

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

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

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

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

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

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



Introduction to Developmental Psychology and Its Research Strategies

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

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

Introduction to Developmental Psychology

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