The Essentials of Human Development

SECOND EDITION

Gabriela **Martorell**

LIFE: THE ESSENTIALS OF HUMAN DEVELOPMENT, SECOND EDITION

Published by McGraw Hill LLC, 1325 Avenue of the Americas, New York, NY 10121. Copyright ©2022 by McGraw Hill LLC. All rights reserved. Printed in the United States of America. Previous edition ©2019. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written consent of McGraw Hill LLC, including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 LWI 24 23 22 21

ISBN 978-1-260-38830-5 (bound edition)
MHID 1-260-38830-1 (bound edition)
ISBN 978-1-264-00280-1 (loose-leaf edition)
MHID 1-264-00280-7 (loose-leaf edition)

Senior Portfolio Manager: *Ryan Treat*
Product Development Manager: *Dawn Groundwater*
Senior Product Developer: *Lauren A. Finn*
Marketing Manager: *Olivia Kaiser*
Content Project Managers: *Mary E. Powers (Core), Jodi Banowetz (Assessment)*
Buyer: *Susan K. Culbertson*
Designer: *Beth Blech*
Content Licensing Specialist: *Carrie Burger*
Cover Image: *Yulia-Images/Getty Images*
Compositor: *Aptara®, Inc.*

All credits appearing on page or at the end of the book are considered to be an extension of the copyright page.

Library of Congress Cataloging-in-Publication Data

Names: Martorell, Gabriela, author.
Title: Life : the essentials of human development / Gabriela Martorell.
Description: Second Edition. | New York : McGraw Hill Education, 2022. | First edition published 2018.
Identifiers: LCCN 2020036761 (print) | LCCN 2020036762 (ebook) | ISBN 9781260388305 (Hardcover) | ISBN 9781264002801 (Spiral Bound) | ISBN 9781264002795 (eBook) | ISBN 9781264002825 (eBook Other)
Subjects: LCSH: Developmental psychology. | Developmental psychobiology.
Classification: LCC BF713 .M3343 2022 (print) | LCC BF713 (ebook) | DDC 155—dc23
LC record available at https://lccn.loc.gov/2020036761
LC ebook record available at https://lccn.loc.gov/2020036762

The Internet addresses listed in the text were accurate at the time of publication. The inclusion of a website does not indicate an endorsement by the authors or McGraw Hill LLC, and McGraw Hill LLC does not guarantee the accuracy of the information presented at these sites.

mheducation.com/highered

brief contents

Preface *xvi*

part 1 About Human Development

1 The Study of Human Development *1*

2 Theory and Research *15*

part 2 Beginnings

3 Forming a New Life *40*

4 Birth and Physical Development during the First Three Years *71*

5 Cognitive Development during the First Three Years *104*

6 Psychosocial Development during the First Three Years *131*

part 3 Early Childhood

7 Physical and Cognitive Development in Early Childhood *159*

8 Psychosocial Development in Early Childhood *190*

part 4 Middle Childhood

9 Physical and Cognitive Development in Middle Childhood *216*

10 Psychosocial Development in Middle Childhood *245*

part 5 Adolescence

11 Physical and Cognitive Development in Adolescence *268*

12 Psychosocial Development in Adolescence *295*

part 6 Emerging and Young Adulthood

13 Physical and Cognitive Development in Emerging and Young Adulthood *316*

14 Psychosocial Development in Emerging and Young Adulthood *340*

part 7 Middle Adulthood

15 Physical and Cognitive Development in Middle Adulthood *361*

16 Psychosocial Development in Middle Adulthood *383*

part 8 Late Adulthood

17 Physical and Cognitive Development in Late Adulthood *409*

18 Psychosocial Development in Late Adulthood *439*

part 9 The End of Life

19 Dealing with Death and Bereavement *465*

Glossary *G-1*

Bibliography *B-1*

Name Index *I-1*

Subject Index *I-29*

connect McGraw Hill Education Psychology APA Documentation Style Guide

contents

Preface *xvi*

part 1 About Human Development

chapter 1
The Study of Human Development *1*

Human Development: An Ever-Evolving Field *2*
- Studying the Life Span *2*
- Human Development Today *2*

The Study of Human Development: Basic Concepts *2*
- Domains of Development *3*
- Periods of the Life Span *3*

Influences on Development *6*
- Heredity, Environment, and Maturation *6*
- Contexts of Development *6*
- Normative and Nonnormative Influences *11*
- Critical or Sensitive Periods *11*

The Life-Span Developmental Approach *12*

summary and key terms *14*

Window on the World Immigrant Families *10*

Research in Action Baby Talk: Cultural Differences in Infant-Directed Speech *13*

chapter 2
Theory and Research *15*

Basic Theoretical Issues *16*
- Issue 1: Is Development Active or Reactive? *16*
- Issue 2: Is Development Continuous or Discontinuous? *17*

Theoretical Perspectives *17*
- Perspective 1: Psychoanalytic *17*
- Perspective 2: Learning *21*
- Perspective 3: Cognitive *22*
- Perspective 4: Contextual *25*
- Perspective 5: Evolutionary/Sociobiological *26*
- Theories and the Research process *27*

Research Methods *27*
- Quantitative and Qualitative Research *27*
- Sampling *28*
- Forms of Data Collection *29*
- Basic Research Designs *31*
- Developmental Research Designs *34*

Ethics of Research *36*
- The Open Science Movement *36*
- Research with Human Participants *37*

summary and key terms *39*

Window on the World The Purpose of Cross-Cultural Research *32*

Research in Action Pregnancy and Alcohol *38*

part 2 Beginnings

chapter 3
Forming a New Life *40*

Conceiving New Life *41*
- Fertilization *41*
- Multiple Births *41*

Mechanisms of Heredity *42*
- The Genetic Code *42*
- What Determines Sex? *43*
- Patterns of Genetic Transmission *44*
- Genetic and Chromosomal Abnormalities *47*
- Genetic Counseling and Testing *50*

Nature and Nurture *51*
- Studying Heredity and Environment *51*
- Interactions of Heredity and Environment *52*

Prenatal Development *54*
- Stages of Prenatal Development *54*
- Maternal Influences *59*
- Paternal Influences *66*

Monitoring and Promoting Prenatal Development *66*
- Disparities in Prenatal Care *67*

summary and key terms *69*

Research in Action Epigenetics and Identical Twins *46*

Window on the World Prenatal Care Around the World *68*

mar88301_fm_i-xxviii.indd 4 10/16/20 12:55 PM

chapter 4

Birth and Physical Development during the First Three Years 71

Childbirth, Culture and Change 72

The Birth Process 73

- Stages of Childbirth 73
- Electronic Fetal Monitoring 74
- Vaginal versus Cesarean Delivery 75
- Medicated versus Nonmedicated Delivery 75
- Childbirth and the COVID-19 Pandemic 77

The Newborn Baby 77

- Size and Appearance 77
- Body Systems 78
- Medical and Behavioral Assessment 78
- States of Arousal 79

Complications of Childbirth 79

- Low Birth Weight 80
- Postmaturity 82
- Stillbirth 82

Survival and Health 83

- Reducing Infant Mortality 83
- Immunization for Better Health 85

Early Physical Development 86

- Principles of Development 86
- Growth Patterns 87
- Nutrition 88
- The Brain and Reflex Behavior 89
- Early Sensory Capacities 95

Motor Development 97

- Milestones of Motor Development 97
- Ethnic and Cultural Influences 99
- Motor Development and Perception 100
- The Ecological Theory of Perception 100
- Dynamic Systems Theory 101

summary and key terms 102

Window on the World Malnutrition: The First Years 90

Research in Action The Etiology of Autism 92

chapter 5

Cognitive Development during the First Three Years 104

Cognitive Development: Six Approaches 105

Behaviorist Approach 105

- Classical and Operant Conditioning 105
- Infant Memory 105

Psychometric Approach 106

- Testing Infants and Toddlers 106
- Assessing the Early Home Environment 107
- Early Intervention 107

Piagetian Approach 108

- Substages of the Sensorimotor Stage 108
- Imitation 109
- Object Concept 110
- Evaluating Piaget's Sensorimotor Stage 113

Information-Processing Approach 113

- Habituation 113
- Tools of infant research 114
- Perceptual processes 114
- Information Processing as a Predictor of Intelligence 115
- Information Processing and Piagetian Abilities 115
- Evaluating Information-Processing Research 118

Cognitive Neuroscience Approach 118

Social-Contextual Approach 119

Language Development 120

- Classic Theories of Language Acquisition 120
- Early Language Development 121
- Characteristics of Early Speech 126
- Variations in Language Development 126
- Influences on Early Language Development 127

summary and key terms 129

Research in Action Research-Based Recommendations for Babies and Media Use 112

Window on the World Children's Books as Socialization Tools 128

chapter 6

Psychosocial Development during the First Three Years 131

Foundations of Psychosocial Development 132

- Emotions 132
- Temperament 135
- Early Social Experience: The Family 138
- Gender 139

Developmental Issues in Infancy 140

- Developing Trust 140
- Developing Attachments 140
- Emotional Communication with Caregivers 144
- Social Referencing 146

Developmental Issues in Toddlerhood 146

- The Emerging Sense of Self 146
- Development of Autonomy 147
- Socialization Processes 148

mar88301_fm_i-xxviii.indd 5 10/16/20 12:55 PM

Peer Influences 150
Sibling Interactions 150
Interactions with Nonsiblings 151
Maternal Employment and Child Care 152
Effects of Maternal Employment 152
Early Child Care 153
Maltreatment: Abuse and Neglect 154
Maltreatment in Infancy and Toddlerhood 155
Ecological Perspective on Abuse 155
Helping Families in Trouble 156
Long-Term Effects of Maltreatment 157
summary and key terms 157
Research in Action Postpartum Depression 145
Window on the World The Terrible Twos? 148

part 3 Early Childhood

chapter 7
Physical and Cognitive Development in Early Childhood 159
Physical Development 160
Bodily Growth and Change 160
Sleep Patterns and Problems 160
Brain Development 162
Motor Skills 163
Health and Safety 164
Obesity and Overweight 165
Undernutrition 165
Allergies 167
Deaths and Accidental Injuries 167
Environmental Influences on Health 169
Cognitive Development: Piagetian Approach 170
Advances of Preoperational Thought 170
Immature Aspects of Preoperational Thought 173
Theory of Mind 175
Media and Cognition 178
Memory Development: Information-Processing Approach 179
Basic Processes and Capacities 179
Recognition and Recall 179
Forming and Retaining Childhood Memories 180
Intelligence: Psychometric and Vygotskian Approaches 181
Traditional Psychometric Measures 181
Influences on Measured Intelligence 181
Testing and Teaching Based on Vygotsky's Theory 182
Language Development 182
Vocabulary 182
Grammar and Syntax 183
Pragmatics and Social Speech 183
Private Speech 184
Delayed Language Development 185
Preparation for Literacy 185
Early Childhood Education 185
Preschool 185
Kindergarten 187
summary and key terms 188
Research in Action Food Deserts, Food Swamps, and Obesity 166
Window on the World Surviving the First 5 Years of Life 168

chapter 8
Psychosocial Development in Early Childhood 190
The Developing Self 191
The Self-Concept 191
Self-Esteem 192
Regulating Emotions 193
Understanding Emotions 194
Erikson: Initiative versus Guilt 194
Gender 195
Gender Differences 195
Perspectives on Gender Development 196
Play 202
Cognitive Levels of Play 202
The Social Dimension of Play 204
Gender Differences in Play 205
Cultural Influences on Play 205
Parenting 206
Forms of Discipline 206
Parenting Styles 208
Other Behavioral Concerns 209
Relationships with Other Children 211
Sibling Relationships 212
The Only Child 213
Playmates and Friends 213
summary and key terms 214
Research in Action The Adaptive Value of Play 203
Window on the World Cultural Variations in Age Segregation 212

mar88301_fm_i-xxviii.indd 6 10/16/20 12:55 PM

part 4 Middle Childhood

chapter 9

Physical and Cognitive Development in Middle Childhood *216*

Physical Development *217*
- Height and Weight *217*
- Brain Development *217*

Health, Fitness, and Safety *218*
- Sleep *218*
- Tooth Decay and Dental Care *218*
- Nutrition *219*
- Physical Activity and FItness *219*
- Obesity and Overweight *220*
- Other Medical Conditions *222*
- Accidental Injuries *224*

Cognitive Development: Piagetian Approach *224*
- Cognitive Advances *224*
- Cultural Influences on Piagetian Task Performance *227*

Information-Processing Approach *228*
- Executive Functioning *228*
- Selective Attention *229*
- Working Memory *229*
- Metamemory and Mnemonic Strategies *229*

Psychometric Approach *230*
- The IQ Controversy *231*
- Influences on IQ *231*
- Specific Intelligence Factors *232*
- Other Intelligence Tests *234*

Language and Literacy *235*
- Vocabulary, Grammar, and Syntax *235*
- Pragmatics *235*
- Second-Language Learning *235*
- Becoming Literate *236*

The Child in School *237*
- Influences on School Achievement *237*

Educating Children with Special Needs *241*
- Children with Learning Problems *241*
- Gifted Children *242*

summary and key terms *243*

Research in Action Barbies and Body Image *222*

Window on the World Culture and IQ *233*

chapter 10

Psychosocial Development in Middle Childhood *245*

The Developing Self *246*
- Self-Concept Development *246*
- Industry versus Inferiority *246*
- Emotional Development *246*

Family Influences *247*
- Family Atmosphere *248*
- Family Structure *250*
- Sibling Relationships *255*

Peer Influences *256*
- Positive and Negative Peer Influences *256*
- Gender and Peer Groups *256*
- Popularity *257*
- Friendship *257*
- Aggression *258*

Mental Health *262*
- Common Emotional Problems *262*
- Treatment for Emotional Disturbances *265*
- Resilience *265*

summary and key terms *266*

Window on the World Bullying: A Worldwide Problem *261*

Research in Action Children's Responses to Trauma *264*

part 5 Adolescence

chapter 11

Physical and Cognitive Development in Adolescence *268*

Adolescence as a Social Construction *269*

Physical Development in Puberty *269*
- Hormonal Changes in puberty *269*
- Timing and Sequence of Puberty *269*

The Adolescent Brain *274*

Physical and Mental Health *275*
- Physical Activity *275*
- Sleep *276*
- Nutrition, Weight, and Eating Disorders *276*
- Substance Abuse *280*
- Depression *282*
- Death in Adolescence *283*

Aspects of Cognitive Maturation *284*
- Formal Operations *284*
- Language Development *285*

mar88301_fm_i-xxviii.indd 7 10/16/20 12:55 PM

Moral Reasoning 286
Prosocial Reasoning and Behavior 288
Educational and Vocational Issues 289
Influences on School Achievement 289
Dropping Out of High School 291
Other Vocational Issues 292
summary and key terms 293
Window on the World Adolescent Overweight and Obesity 277
Research in Action Teens and Media Multitasking 292

chapter 12
Psychosocial Development in Adolescence 295
The Search for Identity 296
Psychosocial Theory 296
Identity Status 296
Racial and Ethnic influences on Identity Formation 298
Identity Development in Sexual Minority Youth 298
Sexuality 299
Sexual Orientation and Gender Identity 299
Sexual Behavior 300
Sexually Transmitted Infections (STIs) 302
Teenage Pregnancy and Childbearing 304
Sexual Education 305
Relationships 306
Adolescents and Parents 306
Sibling Relationships in Adolescence 309
Peer Influences in Adolescence 310
Antisocial Behavior and Juvenile Delinquency 313
Biological influences 313
Environmental Influences 313
Preventing and Treating Delinquency 314
summary and key terms 315
Window on the World Cultural Values and Identity Formation 297
Research in Action Teen Dating and Technology 312

part 6 Emerging and Young Adulthood

chapter 13
Physical and Cognitive Development in Emerging and Young Adulthood 316
Emerging Adulthood 317
Physical Health and Fitness 317
Health Status and Insurance Coverage 317
Genetic Influences on Health 318
Behavioral Influences on Health 319
Indirect Influences on Health 325
Mental Health Problems 326
Sexual and Reproductive Issues 328
Sexual Behavior and Attitudes 328
Sexually Transmitted Infections 329
Menstrual Disorders 329
Infertility 330
Perspectives on Adult Cognition 331
Postformal Thought 331
Reflective Thinking 332
Triarchic Theory of Intelligence 333
Emotional Intelligence 333
Moral Reasoning 333
Critiques of Kohlberg's Approach 334
Culture, Religion, and Moral Reasoning 334
Education and Work 335
College 335
Work 337
summary and key terms 338
Window on the World Internet Addiction 323
Research in Action In Vitro Fertilization 331

chapter 14
Psychosocial Development in Emerging and Young Adulthood 340
Developmental Tasks of Emerging Adulthood 341
Paths to Adulthood 341
Identity Development 341
Models of Personality Development 343
Normative-Stage Models 343
Timing-of-Events Model 345
Trait Models 345
Typological Models 346
Relationships in Emerging Adulthood 346
Relationships with Parents 346
Friendship 347
Love 348
Marital and Nonmarital Lifestyles 349
Single Life 349
Gay and Lesbian Relationships 349

mar88301_fm_i-xxviii.indd 8 10/16/20 12:55 PM

Cohabitation 350
Marriage 351
Parenthood 355
Cultural and Contextual Influences 355
Relationship Dynamics 355
Dual-Income Families 356
When Marriage Ends 357
Divorce 357
Remarriage and Stepparenthood 359
summary and key terms 359
Window on the World Popular Wedding Traditions Across Cultures 352
Research in Action Intimate Partner Violence 358

part 7 Middle Adulthood

chapter 15
Physical and Cognitive Development in Middle Adulthood 361
Middle Age: A Social Construct 362
Physical Changes 362
Sensory Functioning 362
Physical Fitness 363
The Brain at Midlife 363
Structural and systemic Changes 364
Sexuality and Reproductive Functioning 365
Physical and Mental Health 368
Physical Health at Midlife 368
Behavioral Influences on Health 369
Socioeconomic Status and Health 370
Race/Ethnicity and Health 370
Gender and Health 371
Mental Health at Midlife 374
Stress at Midlife 375
Cognitive Performance 376
The Seattle Longitudinal Study 376
Fluid and Crystallized Intelligence 377
Adult Cognition 378
Expertise 378
Integrative Thought 378
Creativity 379
Work and Education 380
Work versus Early Retirement 380
Work and Cognitive Development 380
The Mature Learner 381
summary and key terms 382
Window on the World Cultural Differences in Menopause 366
Research in Action Andropause and Testosterone Replacement 368

chapter 16
Psychosocial Development in Middle Adulthood 383
Change at Midlife 384
Psychosocial Theory and Midlife 384
Generativity versus Stagnation 384
Issues and Themes 385
The Social Clock 385
The Midlife Crisis 386
Change and Stability in Midlife 388
Personality 388
Emotional Development 388
Identity Development 389
Positive Mental Health at Midlife 391
Relationships at Midlife 392
Theories of Social Contact 392
Relationships and Well-Being 393
Consensual Relationships 394
Marriage 394
Cohabitation 395
Divorce 396
Gay and Lesbian Relationships 397
Friendships 398
Relationships with Maturing Children 399
Adolescent Children 399
The Empty Nest 399
Adult Children 400
Voluntary Childlessness 401
Other Kinship Ties 401
Relationships with Aging Parents 401
Relationships with Siblings 404
Grandparenthood 405
summary and key terms 407
Research in Action Midlife Career Change 386
Window on the World The Global Sandwich Generation 402

part 8 Late Adulthood

chapter 17

Physical and Cognitive Development in Late Adulthood *409*

Old Age Today *410*
- The Graying of the Population *410*
- Conceptualizations of Aging *411*

Physical Aging and Longevity *413*
- Correlates of Life Expectancy *413*
- Theories of Aging *414*
- Extending the Life Span *416*

Physical Changes *418*
- Organic and Systemic Changes *419*
- The Aging Brain *419*
- Sensory and Psychomotor Functioning *420*
- Sleep *423*
- Sexual Functioning *423*

Physical and Mental Health *423*
- Health Status *424*
- Chronic Conditions and Disabilities *424*
- Lifestyle Influences on Health and Longevity *425*
- Mental and Behavioral Problems *426*

Cognitive Changes *431*
- Intelligence and Processing Abilities *431*
- Memory *433*
- Wisdom *436*

summary and key terms *437*

Window on the World Elder Care Worldwide *412*

Research in Action The Oldest Old *417*

chapter 18

Psychosocial Development in Late Adulthood *439*

Personality Development in Late Adulthood *440*
- Ego Integrity versus Despair *440*
- Personality Traits in Old Age *440*

Well-Being in Late Adulthood *442*
- Well-Being in Sexual Minorities *443*
- The Effect of Religion and Ethnicity on Well-Being *444*
- Coping and Mental Health *445*
- Models of Successful Aging *446*

Practical and Social Issues Related to Aging *448*
- Work and Retirement *448*
- Aging and Financial Concerns *450*
- Living Arrangements *451*

Personal Relationships in Late Life *455*
- Theories of Social Contact and Social Support *455*
- Relationships and Health *456*
- The Multigenerational Family and Cultural Differences *456*

Marital Relationships *457*
- Long-Term Marriage *457*
- Gay and Lesbian Relationships *458*
- Widowhood *459*
- Divorce and Remarriage *459*

Nonmarital Lifestyles and Relationships *459*
- Single Life *459*
- Cohabitation *460*
- Friendships *461*

Nonmarital Kinship Ties *461*
- Relationships with Adult Children *461*
- Relationships with Siblings *463*

summary and key terms *463*

Window on the World Aging Stereotypes and Ageism *441*

Research in Action Elder Abuse *454*

part 9 The End of Life

chapter 19

Dealing with Death and Bereavement *465*

The Meaning of Death and Dying *466*
- The Cultural Context *466*
- The Mortality Revolution *466*
- Responses to Death across the Life Span *468*

Facing Death and Loss *470*
- Factors Preceding Death *470*
- Confronting Death *471*
- Patterns of Grieving *472*

Significant Losses *474*
- Surviving a Spouse *474*
- Losing a Parent in Adulthood *475*
- Losing a Child *475*
- Mourning a Miscarriage *476*

mar88301_fm_i-xxviii.indd 10 10/16/20 12:55 PM

Medical, Legal, and Ethical Issues *476*

Suicide *477*

Hastening Death *479*

Finding Meaning and Purpose in Life and Death *482*

Life Review *482*

Development: A Lifelong Process *483*

summary and key terms *483*

Window on the World Cultural Variations in Funeral Customs *467*

Research in Action Physician-Assisted Suicide *480*

Glossary *G-1*

Bibliography *B-1*

Name Index *I-1*

Subject Index *I-29*

connect McGraw Hill Education
Psychology
APA Documentation
Style Guide

mar88301_fm_i-xxviii.indd 11 10/16/20 12:55 PM

Guide to Diversity

Text coverage of diversity focuses on the following topics:

Adolescence, in developing countries, p. 3
Adult children, cross-cultural comparison, pp. 400–401, 451
Alcohol abuse, international data, pp. 326–327
Alcohol use during pregnancy, cross-cultural data, pp. 22–23
Arranged marriage, pp. 352–353, 394–395
Asthma, international data, p. 223
Bayley-III scales and culture, p. 106
Bilingualism, p. 127
Bilingualism, and theory of mind, p. 177
Breastfeeding, and race/ethnicity, p. 88
Bride-price, pp. 351–352
Career choice and gender, p. 292
Caregiving, and race/ethnicity and culture, pp. 402–403
Cesarean delivery, international prevalence data, p. 75
Child abuse and culture, p. 156
Childbirth and culture, pp. 72–73
Child care and culture, p. 153
Class size, cultural differences, p. 239
Cohabitation, and race/ethnicity and culture, pp. 350–351, 395–396
Collaborative activities and cultural transmission, p. 135
Corporal punishment and culture, p. 207
Death and culture, p. 466
Dementia and culture, pp. 427–430
Depression and culture, pp. 426–427
Depression and gender, international data, p. 327
Development and culture, race/ethnicity, and socioeconomic status, pp. 7–10
Diabetes, cultural, racial and ethnic differences, pp. 223, 369
Discipline and culture, pp. 206–208
Discrimination, effects of, p. 375
Divorce, and culture, race/ethnicity, and gender, pp. 396–398
Doulas, p. 76
Dowry, pp. 351–352
Education, and socioeconomic status and race/ethnicity, pp. 232, 238–239, 289–290, 335–337
Ethical systems and culture, pp. 334–335
Emerging adulthood, and culture and ethnicity, pp. 341–342
Emotion regulation, and culture, p. 194
Emotional development, and cultural influences, pp. 138, 247
Empty nest and culture, pp. 399–400

End-of-life care and culture, pp. 481–482
Ethnic gloss, p. 10
Ethnic identity formation, pp. 341–342
Ethnographic studies, p. 31
Evolutionary psychology and culture, pp. 12–13
Face preferences and race, pp. 97, 147
Family structure and culture, pp. 6–7, 451–452
Female genital mutilation, p. 301
Gay and lesbian identity, p. 343
Gay and lesbian parents, p. 254
Gay and lesbian relationships, pp. 397–398, 458
Gay marriage, cross-cultural comparison, pp. 349–350
Generativity, and culture, race, and ethnicity, pp. 384–385
Gender development, and culture, pp. 196, 198, 201
Grandparenting and culture, 405–407
Guided participation, pp. 119–120
Handedness and cultural influences, p. 164
Health, and socioeconomic status, race/ethnicity, and gender, pp. 164–170, 218–224, 317–326, 368–374
Heart disease, cultural, racial, and ethnic differences, p. 369
HOME scores, and culture, p. 107
Hypertension, cultural, racial, and ethnic differences, p. 369
Identity, and race, ethnicity, and gender, pp. 296–299, 341–343, 389–390
Identity, and religion, p. 342
Industry versus inferiority, and culture, p. 246
Infant-directed speech, cross-cultural data, p. 129
IQ, and culture, ethnicity, and socioeconomic status, pp. 181–182, 231–234
Kinlessness and culture, p. 462
Language and culture, pp. 123–124, 129
Life span, social construction of, pp. 3–4
Literacy, historical and global trends, p. 236
Literacy, and cross-cultural comparison, p. 381
Living arrangements in old age and culture, pp. 451–452
Low birth weight, and culture, race/ethnicity, and socioeconomic status, pp. 80–82
Malnutrition, global, pp. 60, 90, 165–167,
Marriage, and cultural influences, pp. 351–353, 394–395
Memory, cultural differences in infancy, pp. 118–119
Midlife crisis and culture, pp. 386–388
Moral reasoning and culture, p. 334

Mortality:
in infants, cross-cultural comparison, pp. 73, 83
in infants, U.S. demographic and socioeconomic factors, pp. 72, 81, 83–86
in early childhood, p. 168
in late adulthood, gender differences, p. 413
Motor development, ethnic and cultural differences, pp. 99–100, 163–164
Neglect, pp. 154, 156
Only children and culture, p. 213
Overweight and obesity, and race/ethnicity and culture, pp. 165, 319–320
Parenthood, and culture, pp. 355, 400–401
Parenting styles, cultural differences, pp. 209, 248
Peer relationships and culture, p. 152
Perceptual development in first three years, and culture, p. 123
Personality and culture, p. 388
Physical activity and fitness, international data, pp. 219, 275
Physician-assisted suicide, pp. 480–481
Piagetian task performance, and culture, p. 227
Play, cultural influences, p. 212
Postpartum care and culture, p. 72
Poverty and food insecurity, pp. 320–321
Pragmatics and culture, p. 184
Prenatal care, racial and ethnic disparities, p. 67–69
Preschool, cultural variations in, pp. 185–186
Prosocial behavior, and culture, pp. 288–289
Psychosocial theory, and culture, p. 21
Puberty, ethnic and cultural influences, pp. 271–272
Religion, effect on well-being, p. 444
Self-definition, and race and culture, p. 191
Self-esteem, and culture, p. 192
Self-regulation and culture, pp. 149, 192
Separation anxiety and culture, pp. 142
Sexual minority youth and risk, pp. 299–300
Sexuality, and race, ethnicity, culture, and gender, pp. 299–306, 328–329
Sexually transmitted infections, international data, pp. 302–303, 329
Sexual violence, global prevalence, p. 304
Siblings, cross-cultural comparison, pp. 148, 150–151
Sleep, cross-cultural comparison, p. 79, 160
Smoking, international prevalence, pp. 322–323
Social clock and culture, pp. 345, 385–386
Sociocultural theory and culture, p. 24
Social interactions, and culture, pp. 124, 127, 151, 173
Suicide, and race/ethnicity, pp. 283–284, 477

Retirement, cross-cultural data, pp. 448–450
Rouge task, and culture, p. 147
Teething, cross-cultural beliefs, p. 87
Temperament, and culture, p. 137
Theory of mind, cultural influences on, pp. 177–178
Transgender identity development, pp. 197–198, 343
Undernutrition, p. 165
Visual declines, international data, pp. 420–421
Well-being in sexual minorities, p. 443

Feature coverage of diversity can be found in the following boxes:

Window on the World: Immigrant Families, p. 10
Research in Action: Baby Talk: Cultural Differences in Infant-directed Speech, p. 13
Window on the World: The Purpose of Cross-cultural Research, p. 32
Window on the World: Prenatal Care Around the World, p. 68
Window on the World: Malnutrition: The First Years, p. 90
Window on the World: The Terrible Twos?, p. 148
Research in Action: Food Deserts, Food Swamps, and Obesity, p. 166
Window on the World: Cultural Variations in Age Segregation, p. 212
Window on the World: Culture and IQ, p. 233
Window on the World: Bullying: A Worldwide Problem, p. 261
Research in Action: Children's Responses to Trauma, p. 264
Window on the World: Adolescent Overweight and Obesity, p. 277
Window on the World: Cultural Values and Identity Formation, p. 297
Window on the World: Internet Addiction, p. 323
Window on the World: Popular Wedding Traditions Across Cultures, p. 352
Window on the World: Cultural Differences in Menopause, p. 366
Window on the World: The Global "Sandwich Generation," p. 402
Window on the World: Elder Care Worldwide, p. 412
Window on the World: Aging Stereotypes and Ageism, p. 441
Research in Action: Elder Abuse, p. 454
Window on the World: Cultural Variations in Funeral Customs, p. 467

mar88301_fm_i-xxviii.indd 15 10/16/20 12:55 PM

preface

Life: The Essentials of Human Development is designed to be a brief but thorough account of human development from conception to death, exposing students to culture and diversity, and immersing them in practical application. Written from a developmental framework and borrowing from multiple traditions and theoretical perspectives, *Life: The Essentials of Human Development* also addresses the major periods of development and focuses on the important biological, psychological, and social forces driving change, highlighting theoretical distinctions, research findings, and new directions in the field. *Life: The Essentials of Human Development* will engage your students intellectually and encourage the application of psychological concepts to everyday life.

Paired with McGraw Hill Education Connect, a digital assignment and assessment platform that strengthens the link between faculty, students, and coursework, instructors and students accomplish more in less time. Connect Psychology is particularly useful for remote and hybrid courses, and includes assignable and assessable videos, quizzes, exercises, and interactivities, all associated with learning objectives. Interactive assignments and videos allow students to experience and apply their understanding of psychology to the world with fun and stimulating activities.

Diversity

In response to requests from faculty, substantial space has been devoted to addressing issues of diversity. When relevant, each chapter includes current U.S. statistics drawn from census data and other federal databases, including not just major population trends but also demographic and statistical information on ethnic and racial minorities. Moreover, in many cases, global statistics, trends, and cultural differences in development have been explored as well.

Other forms of diversity have also been considered. For example, information is included on different family systems, including gay and lesbian parents, stepparents, divorced parents, and those families in which adults remain single by choice.

Additionally, each chapter includes a **Window on the World** feature. In this feature, a cross-cultural issue of interest is addressed from a global perspective. These features cover a wide variety of topics, including, for example, cultural differences in wedding traditions and funeral ceremonies along with research-based features on topics such as immigrant families, prenatal care, and bullying. Each feature ends with What's Your View—a series of questions that can be used as springboards for class discussion or writing prompts.

A complete Guide to Diversity can be found on page xii.

Current Research

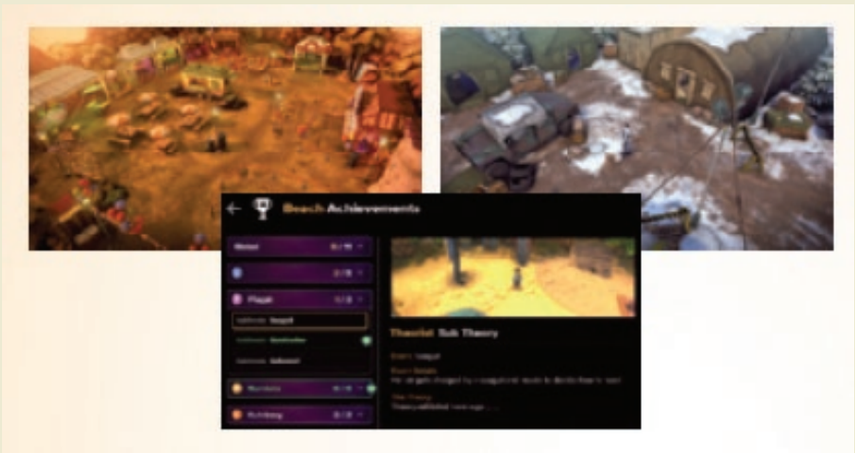
Life: The Essentials of Human Development draws a current picture of the state of the field. In well-established areas of psychology, there is an emphasis on the inclusion of review articles and meta-analyses in order to capture the major trends found through decades of psychological research. In research areas with less information available, the emphasis is on the inclusion of the newest research. Moreover, scientifically important trends, such as the open science movement and modern critiques of historical models of development, are also discussed. Additionally, topics that have recently arisen in the public consciousness have been included. For example, there is new information on COVID-19 across the life span, on technology and young children, on the opioid epidemic, and on the development of transgender people.

Each chapter in *Life: The Essentials of Human Development* includes a **Research in Action** feature, in which a closer look is taken at an issue or area relevant to the chapter. The Research in Action features are designed to stimulate critical thinking about a wide variety of engaging topics, and they include such topics as Barbie dolls, childhood trauma, the impact of technology on development, and intimate partner violence. As with Window on the World features, each Research in Action feature ends with What's Your View question prompts.

mar88301_fm_i-xxviii.indd 17 10/16/20 12:55 PM

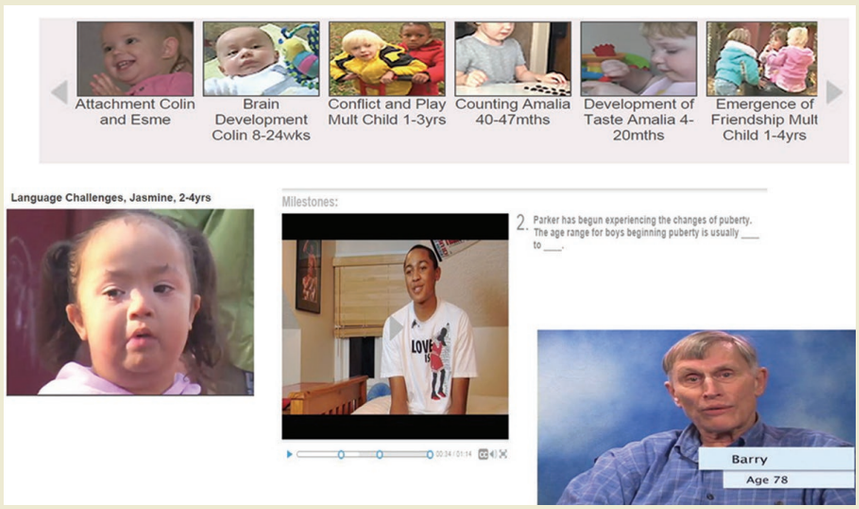
Apply Concepts and Theory in an Experiential Learning Environment

An engaging and innovative learning game, **Quest: Journey Through the Lifespan** provides students with opportunities to apply content from their human development curriculum to real-life scenarios. Students play unique characters who range in age and make decisions that apply key concepts and theories for each age as they negotiate events in an array of authentic environments. Additionally, as students analyze real-world behaviors and contexts, they are exposed to different cultures and intersecting biological, cognitive, and socioemotional processes. Each quest has layered replayability, allowing students to make new choices each time they play—or offering different students in the same class different experiences. Fresh possibilities and outcomes shine light on the complexity of and variations in real human development. This new experiential learning game includes follow-up questions, assignable in Connect and auto-graded, to reach a higher level of critical thinking.



Real People, Real World, Real Life

At the higher end of Bloom's taxonomy, the **McGraw Hill Education Milestones video series** offers an observational tool that allows students to experience life as it unfolds, from infancy to late adulthood. This groundbreaking, longitudinal video series tracks the development of real children as they progress through the early stages of physical, social, and emotional development in their first few weeks, months, and years of life. Assignable and assessable within Connect Psychology, Milestones also includes interviews with adolescents and adults to reflect development throughout the entire life span.



New to this edition, Milestones are available in a more engaging, WCAG-compliant format. Ask your McGraw Hill representative about this new upgrade!

Writing Assignment

McGraw Hill's new **Writing Assignment Plus** tool delivers a learning experience that improves students' written communication skills and conceptual understanding with every assignment. Assign, monitor, and provide feedback on writing more efficiently and grade assignments within McGraw Hill Connect®. Writing Assignment Plus gives you time-saving tools with a just-in-time basic writing and originality checker.

Preparing Students for Higher-Level Thinking

Also at the higher end of Bloom's, **Power of Process** for Psychology helps students improve critical-thinking skills and allows instructors to assess these skills efficiently and effectively in an online environment. Offered through Connect, instructors can upload their own material for use within the system or assign preloaded journal articles. Using a scaffolded framework such as understanding, synthesizing, and analyzing, Power of Process moves students toward higher-level thinking and analysis.

mar88301_fm_i-xxviii.indd 19 10/16/20 12:55 PM

Provide a Smarter Text and Better Value

SMARTBOOK®

Available within Connect, **SmartBook** helps students distinguish the concepts they know from the concepts they don't, while pinpointing the concepts they are about to forget. SmartBook's real-time reports help both students and instructors identify concepts that require more attention, making study sessions and class time more efficient.

New to this edition, SmartBook is now optimized for mobile and tablet use and is accessible for students with disabilities. Content-wise, it has been enhanced with improved learning objectives that are measurable and observable to improve student outcomes. SmartBook personalizes learning to individual student needs. Study time is more productive and, as a result, students are better prepared for class and coursework.

Online Instructor Resources

The resources listed here accompany *Life: The Essentials of Human Development.* Please contact your McGraw Hill representative for details concerning the availability of these and other valuable materials that can help you design and enhance your course.

Instructor's Manual Broken down by chapter, this resource provides chapter outlines, suggested lecture topics, classroom activities and demonstrations, suggested student research projects, essay questions, and critical-thinking questions.

Test Builder New to this edition and available within Connect, **Test Builder** is a cloud-based tool that enables instructors to format tests that can be printed and administered within a Learning Management System. Test Builder offers a modern, streamlined interface for easy content configuration that matches course needs, without requiring a download. Test Builder enables instructors to:

- Access all test bank content from a particular title
- Easily pinpoint the most relevant content through robust filtering options
- Manipulate the order of questions or scramble questions and/or answers
- Pin questions to a specific location within a test
- Determine your preferred treatment of algorithmic questions
- Choose the layout and spacing
- Add instructions and configure default settings

PowerPoint Slides The PowerPoint presentations, now WCAG compliant, highlight the key points of the chapter and include supporting visuals. All of the slides can be modified to meet individual needs.

Remote Proctoring New remote proctoring and browser-locking capabilities are seamlessly integrated within Connect to offer more control over the integrity of online assessments. Instructors can enable security options that restrict browser activity, monitor student behavior, and verify the identity of each student. Instant and detailed reporting gives instructors an at-a-glance view of potential concerns, thereby avoiding personal bias and supporting evidence-based claims.

Major Chapter Changes

1 The Study of Human Development

- Expanded description of the interrelationship among different domains of development
- Example of COVID-19 influencing a historical generation
- Expanded information on adolescence in developing countries
- Research on recent changes in family household composition updated and expanded
- Research on global and U.S. poverty updated and expanded
- New key term and information on ethnic gloss

2 Theory and Research

- Cross-cultural research on Erikson's psychosocial theory of development added
- Information on tabula rasa view of learning theories added
- Information on the influence of culture in Vygotsky's approach added
- Information on the influence of culture in the evolutionary psychology approach added
- Section added on the open science movement,
- The reproducibility problem, publication bias, and p-hacking

3 Forming a New Life

- Research on multiple births added
- Cephalocaudal and proximodistal key terms added
- Research added on the ability of fetuses to feel pain, and to perceive, form preferences to, and remember sounds and tastes
- Expanded section on global prevalence and consequences of malnutrition
- Cross-cultural research on the use of alcohol during pregnancy added
- Research added on the use of e-cigarettes during pregnancy
- Research added on COVID-19 pandemic and risk of death for pregnant women and neonates; new key terms COVID-19, coronavirus, and pandemic
- Research added on racial and ethnic disparities in prenatal care

4 Birth and Physical Development during the First Three Years

- Cross-cultural research on childbirth and postpartum care added
- Research added on risks of childbirth in the United States and globally
- New section on effect of COVID-19 pandemic on childbirth
- Research added on international prevalence of cesarean deliveries
- Research added on doulas
- Cross-cultural research on infant sleep schedules added
- Updated and expanded information on the long-term consequences of low birth weight and postmaturity

- Information added on influence of COVID-19 on vaccination rates
- Research added on malnutrition in developing countries
- Cross-cultural research on cultural beliefs about teething in babies added
- Research added on prevalence of breastfeeding across racial and ethnic groups
- Information added on breastfeeding for mothers infected with COVID-19
- Research added on early preference for faces in infancy
- Section added on cultural influences on motor development in infancy

5 Cognitive Development during the First Three Years

- Cross-cultural research on the Bayley scales and the HOME inventory added
- Updated and expanded information on early intervention programs
- Updated and expanded information on imitation in infancy
- Research on the use of electronic media devices in infancy added
- Section added on tools of infant research
- Updated and expanded information on categorization and the understanding of causality and number in infancy
- Cross-cultural research on implicit and explicit memory system development added
- Cross-cultural research on the application of Vygotskian principles in early childhood education added
- Section on language development reorganized
- Section added on cultural differences in perceptual development
- Cross-cultural research on the use of gestures and learning new nouns and verbs added
- Research on bilingual language development added
- Research on brain development and its relationship to language development added
- Section on the role of social interaction in language development reorganized and expanded
- Cross-cultural research on the use of infant-directed speech added

6 Psychosocial Development during the First Three Years

- Cross-cultural research on emotional expression added
- Cross-cultural research on crying and infant physiology added
- Research on altruistic helping and empathy in infants updated and expanded
- Section added on collaborative activities and cultural transmission
- Section added on cultural influences on temperament
- Research on gender differences in infancy and toddlerhood and parental influences on gender differences updated and expanded
- Section on attachment reorganized
- Cross-cultural research on separation anxiety added
- Research on biological aspects of mutual regulation added
- Research on infants' responses to faces of different race and ethnicity added
- Cross-cultural research on the development of the self added
- Cross-cultural research on the development of self-regulation added
- Updated and expanded section on socialization influences
- Updated and expanded sections on contact with other children, including research on cross-cultural differences
- Cross-cultural research on early child care added
- Revised and updated section on factors impacting child care
- Research on cultural influences on abuse and neglect updated and expanded

mar88301_fm_i-xxviii.indd 22 10/16/20 12:55 PM

7 Physical and Cognitive Development in Early Childhood

- Research on sleep disturbances updated and expanded
- Research on the development of gross motor skills updated and expanded
- Cross-cultural research on handedness added
- Research on malnutrition and the difference between wasting, stunting, and hidden hunger added
- Updated information on race, ethnicity, socioeconomic status, and access to health care
- Section on understanding of number updated and reorganized
- Section added on distinguishing between fantasy and reality
- Research on brain development and theory of mind added
- Section added on cultural influences on theory of mind
- Section added on media influences on cognition
- Cross-cultural research on influences on measured intelligence added
- Cross-cultural research on pragmatics and social speech added
- Section added on cultural variations in preschool

8 Psychosocial Development in Early Childhood

- Section added on racial and cultural influences on self-definition
- Section added on cultural influences on self-esteem
- Section added on cultural influences on self-regulation
- Section on understanding emotions reorganized and updated
- Section added on initiative versus guilt
- Research on transgender identity development updated and expanded
- Updated and expanded section on cultural influences on gender development
- Updated and expanded section on cultural influences on play
- Cross-cultural research added on the use of corporal punishment
- Research added on how cultural context affects the use of discipline
- Cross-cultural research on parenting styles updated and expanded
- Research on being an only child in China added

9 Physical and Cognitive Development in Middle Childhood

- Sections on physical development and health, fitness, and safety reorganized
- Section added on tooth decay and dental care
- Section added on physical activity and fitness in different countries
- Research on global overweight and obesity added
- Cross-cultural research on asthma and diabetes added
- Section added on childhood hypertension
- Information added on COVID-19 and children's health
- Section added on cultural influences on Piagetian tasks
- Section added on historical and global literacy trends
- Section added on the influence of technology and literacy
- Section added on educational reform
- Cross-cultural research on differences in class size added
- Section added on the impact of COVID-19 on education

mar88301_fm_i-xxviii.indd 23 10/16/20 12:55 PM

10 Psychosocial Development in Middle Childhood

- Section added on cultural influences on emotional development
- Section added on family conflict
- Cross-cultural research on variations in family structure added
- Cross-cultural research on variations in divorce added
- Research on gay and lesbian families updated and expanded
- Research on historical trends in adoptive families added
- Section added on gender differences in peer groups
- Section on aggression reorganized and updated
- Section added on the influence of COVID-19 on children's mental health
- Revised and updated Research in Action

11 Physical and Cognitive Development in Adolescence

- Research on influences on and effects of pubertal timing updated and expanded
- Section added on the cultural context of puberty
- Section on the adolescent brain revised and updated
- Research on global trends in physical activity during adolescence added
- Section on nutrition, weight, and eating disorders revised and updated
- Section added on influences on substance abuse
- Section added on immature aspects of adolescent cognition
- Research added on the influence of COVID-19 and education
- Section added on gender and career choice

12 Psychosocial Development in Adolescence

- Section added on racial and ethnic influences on identity formation
- Section added on identity development in sexual minority youth
- Section added on risks for sexual minority youth
- Research on religiosity as a protective factor for sexual risk-taking added
- Section added on female genital mutilation
- Section on sexually transmitted infections updated and expanded to include global prevalence rates
- Research on global prevalence of teen pregnancy added
- Section on preventing teen pregnancy updated and expanded to include global data
- Critique of unidirectional model of parenting styles added
- Research on sibling relationships in non-Western cultures added
- Section added on social media and electronic interactions
- Research on global prevalence of sexual violence in adolescence added
- Section on biological influences on aggression updated and expanded

13 Physical and Cognitive Development in Emerging and Young Adulthood

- Cross-cultural research on emerging adulthood updated and expanded
- Updates on health care access in young adulthood added
- Research added on risk of complications from COVID-19 in young adults
- Section on food insecurity added
- Section on physical activity in young adulthood updated and expanded
- Research on global prevalence of smoking and alcohol abuse added
- New key term: Internet addiction

mar88301_fm_i-xxviii.indd 24 10/16/20 12:55 PM

- Research on the influence of negative interactions in relationships and health added
- Cross-cultural research on gender differences in depression added
- Cross-cultural research on sexual behaviors and attitudes added
- Section on reflective thinking updated and expanded
- Cross-cultural research on the ethical systems of autonomy, community, and divinity added
- Research added on the impact of COVID-19 on college enrollment

14 Psychosocial Development in Emerging and Young Adulthood

- Section on paths to adulthood updated and expanded
- Section added on cultural issues and ethnic identity formation
- Section added on religious identity formation
- Section added on sexual and gender identity formation
- Cross-cultural research on emerging adults living with parents added
- Cross-cultural research on gay and lesbian marriage added
- Section on cohabitation reorganized and updated
- Section added on contextual and cultural differences in marriage
- Information on bride-price, dowry, and arranged marriage added
- Section added on cultural and contextual influences on parenthood

15 Physical and Cognitive Development in Middle Adulthood

- Research on global prevalence and correlates of sensory and perceptual problems in middle-age adults added
- Section on the brain at midlife updated and expanded
- Section on sexual activity at midlife revised and updated
- Cross-cultural data on hypertension, heart disease, and diabetes added
- All health-related statistics updated
- Research on stress resulting from prejudice and discrimination added
- Section on stress reorganized and updated with information on COVID-19
- Section on creativity updated and expanded

16 Psychosocial Development in Middle Adulthood

- Sections on theoretical approaches and issues and themes at midlife reorganized and updated
- Section added on cultural differences in generativity
- Cross-cultural research on the social clock added
- Cross-cultural research on the midlife crisis added
- Section on culture and personality added
- Section on identity process theory added
- Section on generativity and identity processes in women revised and updated
- Research on the relationship between religion and well-being added
- Research on arranged marriage and marital satisfaction added
- Cross-cultural research on cohabitation and divorce added
- Research on helicopter parenting added
- Multicultural and cross-cultural research on the empty nest added
- Section on ethnic and cultural differences in caregiving for aging parents added
- Section added on cultural differences in grandparenting

17 Physical and Cognitive Development in Late Adulthood

- Section on the aging brain revised and updated
- Research on racial and ethnic variations in cataract prevalence added
- Cross-cultural research on the prevalence of visual and hearing problems added
- New section added on COVID-19 risk and age
- Cross-cultural research on depression added
- Cross-cultural research on dementia added
- Research on the influence of personality on dementia added

18 Psychosocial Development in Late Adulthood

- Section on personality stability and change updated and expanded
- Research on the predictive value of personality change updated and expanded
- Section on well-being in late adulthood updated and expanded
- Section on well-being in sexual minorities added
- Section on the influence of religion on well-being updated and expanded
- New information on the influence of COVID-19 on jobs for older adults
- Cross-cultural research on retirement added
- Cross-cultural research on living arrangements in late adulthood added
- Research on the influence of pets on loneliness added
- Section on living with adult children updated and expanded
- Section on living in institutions updated and expanded
- Section on cultural differences in multigenerational families updated and expanded
- Research on living apart together relationships added
- Cross-cultural research on kinlessness in late adulthood added

19 Dealing with Death and Bereavement

- Section on the meaning of death and dying reorganized and updated
- Cross-cultural research on children's understanding of death added
- Section on the terminal drop added
- Section on near-death experiences added
- Section on losing a child revised and updated
- Cross-cultural research on aging added
- Section on international variations in end-of-life decisions added

mar88301_fm_i-xxviii.indd 26 10/16/20 12:56 PM

Acknowledgments

Thank you to Rebecca Howell, Forsyth Technical Community College, and Dr. Khia Thomas, Broward College, for their important cultural and research contributions to Window on the World and Research in Action.

A special thanks to Jeffery S. Mio, California State Polytechnic University, Pomona, Danice L. Brown, Towson University, Galina Smith, Health Programs Manager for Boston Alliance of GLBTQ Youth, and Joy Wilson, The Human Rights Campaign's National Parents for Transgender Equality Council member for their careful review of diversity coverage and thoughtful suggestions about where I could do better.

Many thanks to those faculty instructors whose insight and feedback contributed to the second edition of *Life: The Essentials of Human Development:*

Mizuho Arai, Bunker Hill Community College

Renee Babcock, Central Michigan University

Phaer Bonner, Jefferson State Community College

Thea Boyer, Johnston Community College

Holly Brand, Missouri Baptist University

Virginia Cashion, Liberty University

Paul J. Chara, University of Northwestern—St. Paul

Tiffany Chenneville, University of South Florida, St. Petersburg

Nicki Favero, University of Lynchburg

Nadia Flanigan, Georgia Southern University

Lynn Haller, Morehead State University

Nicole Hamilton, St. Philips College

Aylene Harper, CCAC, South

Deborah Krause, Mid-State Technical College

Heekyeong Park, Tulsa Community College

Jodi Price, University of Alabama, Huntsville

Erin Richman, University of North Florida

James Rodgers, Hawkeye Community College

Kim Rybacki, Dutchess Community College

Peggy Skinner, South Plains College

Andrew Supple, University of North Carolina, Greensboro

Victoria Van Wie, Lone Star College, CyFair

Lora Vasiliauskas, Virginia Western Community College

From Gabi Martorell to my friends and family: I finished writing this book as the COVID-19 pandemic roared into our lives. While physically distanced, your support and love made the experience bearable. I have never been more grateful for our bonds. May you stay healthy and safe as we navigate the roiling waters ahead.

Gabriela Martorell

mar88301_fm_i-xxviii.indd 27 10/16/20 12:56 PM

The Essentials of Human Development

part 1
ABOUT HUMAN DEVELOPMENT

chapter 1

The Study of Human Development

Erik Isakson/Getty Images

learning objectives

Describe human development and how its study has evolved.

Describe the domains and periods of human development.

Give examples of the influences that make one person different from another.

Discuss the principles of the life-span perspective.

In this chapter we describe how the field of human development evolved. We identify aspects of development and show how they interrelate. We summarize major developments during each period of life. We look at influences on development and the contexts in which each occurs.

Human Development: An Ever-Evolving Field

From the moment of conception, human beings begin a lifelong process of change until the last flicker of life ends. A single cell develops into a living, breathing, walking, talking person who moves through an ever-changing world, both being influenced by and influencing it. Although we all follow our own unique trajectory, we also share a species heritage, many common experiences, and broad patterns of development. These patterns of development are explored throughout this book.

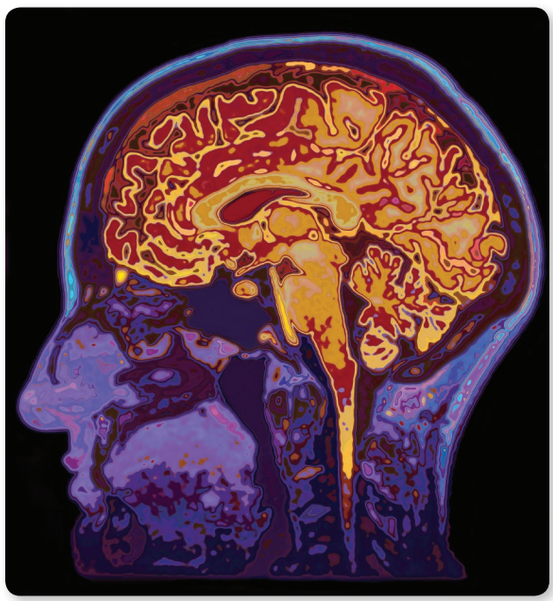
human development
Scientific study of processes of change and stability throughout the human life span.

The field of **human development** focuses on the scientific study of the systematic processes of change and stability in people. Developmental scientists investigate the ways in which people change or stay the same from conception to death. The work of developmentalists can have a dramatic impact on people's lives. Research findings often have applications to child rearing, education, health, and social policy.

STUDYING THE LIFE SPAN

life-span development
Concept of human development as a lifelong process that can be studied scientifically.

When the field of developmental psychology emerged as a scientific discipline, most researchers focused their energies on infant and child development. Growth and development are more obvious during these times given the rapid pace of change. As the field matured, however, it became clear that developmental science should include more than infancy and childhood. Now researchers consider **life-span development** to be from "womb to tomb," comprising the entire human life span from conception to death. Moreover, they acknowledge that development can be either positive (e.g., becoming toilet trained or enrolling in a college course after retirement) or negative (e.g., once again wetting the bed after a traumatic event or isolating yourself after retirement).



Technology has allowed scientists to investigate previously hidden processes. Brain imaging techniques are used to map where certain thought processes take place. SpeedKingz/Shutterstock

HUMAN DEVELOPMENT TODAY

As the field of human development itself developed, its goals came to include description, explanation, prediction, and intervention. For example, to *describe* when most children say their first word or how large their vocabulary is at a certain age, developmental scientists observe large groups of children and establish norms, or averages, for behavior at various ages. They then attempt to *explain* how children acquire language and why some children learn to speak later than usual. This knowledge may make it possible to *predict* future behavior, such as the likelihood that a child will have serious speech problems. Finally, an understanding of how language develops may be used to *intervene* in development, for example, by giving a child speech therapy.

Development is messy. It's complex and multifaceted and shaped by interacting arcs of influence. Thus development is best understood with input from a variety of theoretical and research orientations. Students of human development draw from a wide range of disciplines, including psychology, psychiatry, sociology, anthropology, biology, genetics, family science, education, history, and medicine. This book includes findings from research in all these fields.

The Study of Human Development: Basic Concepts

Developmentalists study processes of change and stability in all domains, or aspects, of development throughout all periods of the life span.

mar88301_ch01_001-014.indd 2 8/9/20 3:09 PM

DOMAINS OF DEVELOPMENT

Developmental scientists study three major *domains*, or aspects, of development: physical, cognitive, and psychosocial. Growth of the body and brain, sensory capacities, motor skills, and health are parts of **physical development.** Learning, attention, memory, language, thinking, reasoning, and creativity make up **cognitive development.** Emotions, personality, and social relationships are aspects of **psychosocial development.**

physical development
Development of the body and brain, including patterns of change in sensory capacities, motor skills, and health.

cognitive development
Pattern of change in mental abilities, such as learning, attention, memory, language, thinking, reasoning, and creativity.

psychosocial development
Pattern of change in emotions, personality, and social relationships.

Although in this book we talk separately about physical, cognitive, and psychosocial development, these domains are interrelated. Child development is a complex and tangled web of multiple influences, and understanding these influences requires thinking carefully about their interactions. Just as a fly caught on one thread of a web sends reverberations across the entire structure, development in one area sends ripples though all other areas.

For example, physical development affects cognitive and psychosocial development. A child with frequent ear infections may develop language more slowly than a child without this physical problem. In late adulthood, physical changes in the brains of some adults may lead to intellectual and personality deterioration.

Similarly, cognitive advances and declines are related to physical and psychosocial development. A child who is precocious in language development may bring about positive reactions in others and thus gain in self-worth. Memory development reflects gains or losses in physical connections in the brain. An adult who has trouble remembering people's names may feel shy in social situations.

And finally, psychosocial development can affect cognitive and physical functioning. Without meaningful social connections, physical and mental health suffers. Motivation and self-confidence are important contributors to school success, whereas negative emotions such as anxiety can impair performance. Researchers have even identified links between a conscientious personality and length of life.

PERIODS OF THE LIFE SPAN

Division of the life span into periods is a **social construction**: a concept or practice that is an invention of a particular culture or society. There is no objectively definable moment when a child becomes an adult or a young person becomes old. Because the concept of childhood is a social construction, the form it takes varies across cultures. For example, in contrast to the relative freedom children have in the United States today, young children in Colonial times were expected to do adultlike tasks such as knitting socks and spinning wool (Ehrenreich & English, 2005). Inuit parents in the Canadian Arctic believe that young children are not yet capable of thought and reason and therefore are lenient when their children cry or become angry (Briggs, 1970). And Maniq parents in southern Thailand regularly allow their toddlers to play with knives, and by 4 years of age most children can easily gut small animals (Lancy, 2016).

social construction
A concept or practice that may appear natural and obvious to those who accept it, but that in reality is an invention of a particular culture or society.

A similar construction involves *adolescence*, which is a recent concept that emerged as society became more industrialized. In most nonindustrial tribal cultures, the transition from childhood to adulthood is most clearly marked by marriage (Schlegel & Barry, 1991). In the United States until the early twentieth century, young people were considered adults once they left school, married, or got a job. However, shifting social trends altered this pattern. By the 1920s, with the establishment of comprehensive high schools to meet the needs of a growing economy and with more families able to support extended formal education for their children, the teenage years became a distinct period of development (Keller, 1999). This trend has been mirrored globally in developed countries as the average age of marriage has edged upward and the education gap between men and women has narrowed (Curtis, 2015). Little research exists on the passage from adolescence to adulthood for young people in developing countries; however, there are suggestions that collectivistic concerns, such as

These children are engaging in all three domains of development: motor activity (physical development), playing games (cognitive development), and social relationship building (psychosocial development).
Jacob Maentz/The Image Bank Unreleased/Getty Images

mar88301_ch01_001-014.indd 3 8/9/20 3:10 PM

caring for family members, figure more prominently as markers of the transition in these cultural contexts (Seiter & Nelson, 2011; Zhong & Arnett, 2014).

In this book, we follow a sequence of eight periods generally accepted in Western industrial societies. After describing the crucial changes that occur in the first period, before birth, we trace all three domains of development through infancy and toddlerhood, early childhood, middle childhood, adolescence, emerging and young adulthood, middle adulthood, and late adulthood (Table 1.1). For each period after infancy and toddlerhood, we have combined physical and cognitive development into a single chapter.

TABLE 1.1 Typical Major Developments in Eight Periods of Human Development

Age Period	Physical Developments	Cognitive Developments	Psychosocial Developments
Prenatal Period (conception to birth)	Conception occurs. Genes interact with environmental influences; vulnerability to environmental influences is great. Basic body structures and organs form; brain growth spurt begins; physical growth is the most rapid in the life span.	Abilities to learn and remember and to respond to sensory stimuli are developing.	Fetus responds to mother's voice and develops a preference for it.
Infancy and Toddlerhood (birth to age 3)	All senses and body systems operate at birth to varying degrees. The brain grows in complexity and is highly sensitive to environmental influence. Physical growth and development of motor skills are rapid.	Abilities to learn and remember are present, even in early weeks. Use of symbols and ability to solve problems develop by end of second year. Comprehension and use of language develop rapidly.	Attachments to parents and others form. Self-awareness develops. Shift from dependence toward autonomy occurs. Interest in other children increases.
Early Childhood (ages 3 to 6)	Growth is steady; appearance becomes more slender and proportions more adultlike. Appetite diminishes, and sleep problems are common. Handedness appears; fine and gross motor skills and strength improve.	Understanding of other people's perspectives grows. Cognitive immaturity results in some illogical ideas about the world. Memory and language improve, intelligence becomes more predictable. Preschool experience is common, and kindergarten experience is more so.	Self-concept and understanding of emotions become more complex; self-esteem is global. Independence, initiative, and self-control increase. Gender identity develops. Play becomes more imaginative, elaborate, and social; altruism, aggression, and fearfulness are common. Family is still the focus of social life, but other children become more important.
Middle Childhood (ages 6 to 11)	Growth slows; strength and athletic skills improve. Respiratory illnesses are common, but health is generally better than at any other time in the life span.	Egocentrism diminishes. Children begin to think logically but concretely; memory and language skills increase. Some children show special educational needs and strengths.	Self-concept becomes more complex, affecting self-esteem. Coregulation reflects gradual shift in control from parents to child. Peers assume central importance.

mar88301_ch01_001-014.indd 4 8/9/20 3:10 PM

The age divisions shown in Table 1.1 are approximate and arbitrary. This is especially true of adulthood, when there are no clear-cut social or physical landmarks, such as starting school or entering puberty, to signal a shift from one period to another. Although individual differences exist in the way people deal with the characteristic events and issues of each period, developmentalists suggest that certain basic needs must be met and certain tasks mastered for normal development to occur.

TABLE 1.1 Typical Major Developments in Eight Periods of Human Development

Age Period	Physical Developments	Cognitive Developments	Psychosocial Developments
Adolescence (ages 11 to about 20)	Physical growth and other changes are rapid and profound; reproductive maturity occurs. Major health risks arise from behavioral issues, such as eating disorders and drug abuse.	Ability to think abstractly and use scientific reasoning develops but immature thinking persists in some attitudes and behaviors. Education focuses on preparation for college or vocation.	Search for identity becomes central. Relationships with parents are generally good; peer group may exert a positive or negative influence.
Emerging and Young Adulthood (ages 20 to 40)	Physical condition peaks, then declines slightly. Lifestyle choices influence health.	Thought and moral judgments become more complex. Educational and occupational choices are made, sometimes after period of exploration.	Personality traits and styles become relatively stable. Intimate relationships and personal lifestyles are established but may not be lasting. Most people marry, and most become parents.
Middle Adulthood (ages 40 to 65)	Slow deterioration of sensory abilities, health, stamina, and strength may begin, but individual differences are wide. Women experience menopause.	Mental abilities peak; expertise and practical problem-solving skills are high. Creative output may decline but improve in quality. Varied career trajectories may occur, including career success and peak earning power, burnout or career change.	Sense of identity continues to develop; midlife transition may occur. Dual responsibilities of caring for children and parents may cause stress. Launching of children leaves empty nest.
Late Adulthood (age 65 and over)	Most people are healthy and active, although health and physical abilities generally decline. Slowing of reaction time affects some aspects of functioning.	Most people are mentally alert. Although intelligence and memory may deteriorate in some areas, most people find ways to compensate.	Retirement from workforce may occur. Relationships with family and close friends can provide important support. Search for meaning in life assumes central importance.

mar88301_ch01_001-014.indd 5 8/9/20 3:10 PM

Influences on Development

individual differences
Differences in characteristics, influences, or developmental outcomes.

Although students of development are interested in the universal processes of development experienced by all typical human beings, they also study **individual differences** in characteristics, influences, and developmental outcomes. Every person has a unique developmental trajectory. Developmental psychology aims to identify the universal influences on development and then apply those to understanding individual differences in developmental trajectories.

HEREDITY, ENVIRONMENT, AND MATURATION

heredity
Inborn traits or characteristics inherited from the biological parents.

environment
Totality of nonhereditary, or experiential, influences on development.

Some influences on development originate primarily with **heredity**: inborn traits or characteristics inherited from the biological parents. Other influences come largely from the **environment**: the world outside the self, beginning in the womb, and the learning that comes from experience. Which of these two factors has more impact on development? The issue of the relative importance of *nature* (heredity) and *nurture* (environmental influences both before and after birth) historically generated intense debate.

Today scientists have found ways to more precisely measure the roles of heredity and environment in the development of specific traits within a population. Research with regard to almost all characteristics points to a blend of inheritance and experience. For example, even though intelligence is strongly influenced by heredity, it is also affected by parental stimulation, education, peer influence, and other variables. Contemporary theorists and researchers are more interested in finding ways to explain how nature and nurture work together than in arguing about which factor is more important.

maturation
Unfolding of a natural sequence of physical and behavioral changes.

Many typical changes of infancy and early childhood, such as the abilities to walk and talk, are tied to **maturation** of the body and brain—the unfolding of a natural sequence of physical changes and behavior patterns. As children grow into adolescents and then into adults, individual differences in innate characteristics and life experience play a greater role. Throughout life, however, maturation continues to influence certain biological processes, such as brain development.

Even in processes that all people undergo, rates and timing of development vary. Throughout this book, we talk about average ages for the occurrence of certain events: the first word, the first menstruation or nocturnal emission, the development of logical thought, and menopause. But there is wide variation among people with respect to these norms. Only when deviation from the average is extreme should we consider development exceptionally advanced or delayed.

To understand development, then, we need to look at the *inherited* characteristics that give each person a start in life. We also need to consider the many *environmental* factors that affect development, especially such major contexts as family, neighborhood, socioeconomic status, race/ethnicity, and culture. We need to consider how heredity and environment interact. We need to understand which aspects of development are primarily maturational and which are not. We need to look at influences that affect many or most people at a certain age or a certain time in history and also at those that affect only certain individuals. Finally, we need to look at how timing can accentuate the impact of certain influences.

CONTEXTS OF DEVELOPMENT

Human beings are social animals. For an infant, the immediate context of development is typically the family, but the family in turn is subject to the wider and ever-changing influences of social and cultural influences.

nuclear family
Two-generational kinship, economic, and household unit consisting of one or two parents and their biological children, adopted children, or stepchildren.

Family The **nuclear family** is a household unit consisting of one or two parents and their children, whether biological, adopted, or stepchildren. Historically, the two-parent nuclear family has been the normative family unit in the United States and other Western societies. In 1960, 73 percent of children lived in families with two

mar88301_ch01_001-014.indd 6 8/9/20 3:10 PM

married parents in their first marriage and 37 percent of households were composed of nuclear families. In 2014, only 69 percent of children and 16 percent of households could be described in the same fashion (Pew Research Center, 2015). Instead of a large, rural family in which parents and children work side by side on the family farm, we are now more likely to see smaller, urban families in which both parents work outside the home and children spend much of their time in school or child care. The increased incidence of divorce also has affected the nuclear family. Children of divorced parents may live with one or the other parent or may move back and forth between them. The household may include a stepparent and stepsiblings or a parent's live-in partner. There are increasing numbers of single and childless adults, unmarried parents, and gay and lesbian households (Dye, 2010; Brown et al., 2015; Umberson et al., 2015). Moreover, there are increased numbers of grandparents raising their grandchildren (Sadruddin et al., 2019).

In many societies in Asia, Africa, and Latin America and among some U.S. families that trace their lineage to those countries, the **extended family**—a multigenerational network of grandparents, aunts, uncles, cousins, and more distant relatives—is the traditional family form. Many people live in *extended-family households*, where they have daily contact with kin. Adults often share breadwinning and child-raising responsibilities, and older children are responsible for younger brothers and sisters. Today the extended-family household is becoming slightly less typical in many developing countries (Bradbury et al., 2014) in part due to industrialization and migration to urban centers (Kinsella & Phillips, 2005). However, this does not imply that all countries will converge toward a nuclear family structure in concert with their country's economic and technological development, as unique cultural and contextual influences still shape family dynamics (Pesando et al, 2019).

extended family
Multigenerational kinship network of parents, children, and other relatives, sometimes living together in an extended-family household.

Meanwhile, in the United States, economic pressures, housing shortages, immigration patterns, out-of-wedlock childbearing, and an increase in life expectancy have helped to fuel a trend toward three- and even four-generational family households. In 2016, a record 20 percent of the U.S. population, or 64 million people, lived in multigenerational households (Kohn & Passel, 2018). This number has been steadily increasing since the low of 12 percent reached in 1980 (Fry, 2019). At the same time, the rate of single parenthood has also been rising, and currently the United States has the world's highest rate of single parenthood (Kramer, 2019).

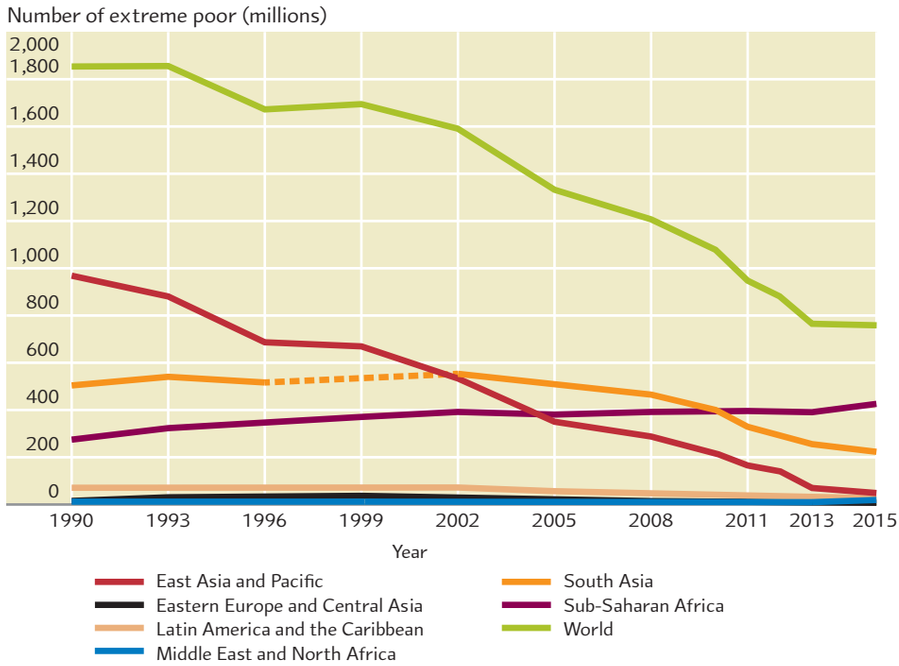
socioeconomic status (SES)
Combination of economic and social factors describing an individual or family, including income, education, and occupation.

Socioeconomic Status and Neighborhood A family's **socioeconomic status (SES)** is based on family income and the educational and occupational levels of the adults in the household. SES is related to developmental processes (such as mothers' verbal interactions with their children) and to developmental outcomes (such as health and cognitive performance). SES affects these processes and outcomes indirectly, through such related factors as the kinds of homes and neighborhoods people live in and the quality of nutrition, medical care, and schooling available to them.

An extended-family household might include grandparents, aunts, and cousins. Tim Macpherson/Cultura/Getty Images

FIGURE 1.1
Number of Extreme Poor, 1990–2015

Source: World Bank. (2019). *Poverty and Shared Prosperity 2018: Taking on Inequality*. Washington, DC: World Bank.



More than 736 million people worldwide lived on less than $1.90 a day in 2015. The majority of these people are young, live in rural areas, and are poorly educated. Although this represents a large number of people, it has fallen by almost 1.1 billion people since 1990 (Figure 1.1). The target of reducing the extreme poverty rate to below 3 percent has been reached in some previously troubled areas, including East Asia and Pacific, Europe, and Central Asia. However, sub-Saharan Africa remains challenged and showed an increase in extreme poverty in 2015. According to projections, by 2030, nearly 9 out of 10 people living in extreme poverty will be from sub-Saharan Africa (World Bank, 2019).

In the United States, 13 million children—18 percent of all children under age 18—live in poverty (Kids Count Data Center, 2019). Over 5 million of those children are in extreme poverty. Youngest children, who are the most vulnerable, are most likely to live in poverty (Children's Defense Fund, 2019). In the United States, race or ethnicity are often associated with SES. African American children (32 percent), American Indian (31 percent), and Hispanic children (26 percent) are far more likely to live in poverty than their white counterparts (11 percent) (Kids Count Data Center, 2019).

Poverty, especially if it is long-lasting, can be harmful to the physical, cognitive, and psychosocial well-being of children and families. Poor children are more likely than other children to go hungry, to have frequent illnesses, to lack access to health care, to experience violence and family conflict, to show emotional or behavioral problems (National Academies of Sciences, Engineering, and Medicine, 2019; Schickedanz et al., 2015; Eckenrode et al., 2014; Yoshikawa et al., 2012), and to have their cognitive potential and school performance suffer as well (Wolf et al., 2017; Luby, 2015). The harm done by poverty may be indirect, through its impact on parents' emotional state and parenting practices and on the home environment they create. Threats to well-being multiply if, as often happens, several **risk factors**—conditions that increase the likelihood of a negative outcome—are present. However, the negative effects of poverty are not inevitable. For example, factors such as supportive parenting (Hostinar & Miller, 2019; Morris et al., 2017; Barton et al., 2018) or particular temperament profiles (Moran et al., 2017; Rudasill et al., 2017) can buffer children against ill effects.

risk factors
Conditions that increase the likelihood of a negative developmental outcome.

Children from middle- and lower-income families, even if above the poverty line, can also suffer the negative effects of employment insecurity and income inequality and may show decreased educational attainment, increased hostile and antisocial behaviors, and

mar88301_ch01_001-014.indd 8 8/9/20 3:39 PM

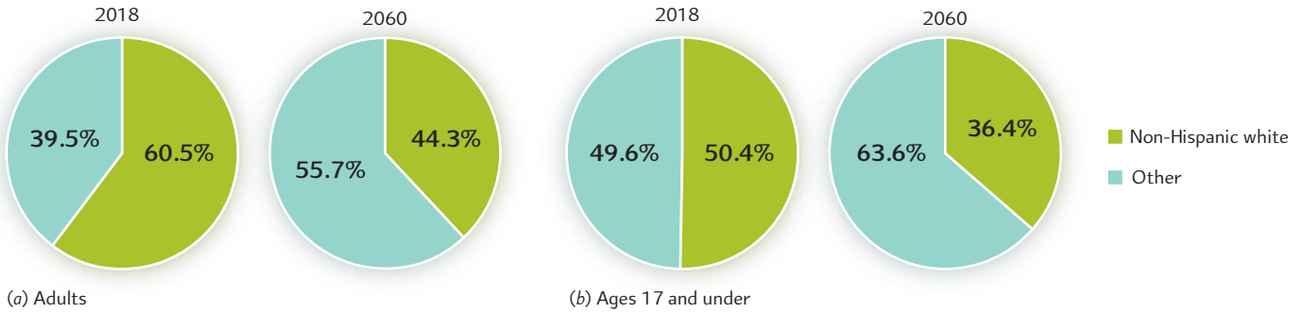


FIGURE 1.2

Population Projections for Non-Hispanic White and Minority Groups, 2018–2060

(a) According to Census Bureau projections, racial/ethnic minorities will reach 55.7 percent of the U.S. population, exceeding the proportion of non-Hispanic white people by 2060. (b) Also by 2060, "minority" children under age 18 are expected to make up 63.6 percent of the child population.

Source: Colby, S. L., & Ortman, J. M. (2015, March). *Projections of the size and composition of the U.S. population: 2014–2060. Current Population Reports.* Washington, DC: U.S. Census Bureau. And Frey, W. (2018). The US will become "minority white" in 2045, Census projects. [Blog post].*The Avenue.* Retrieved from *www.brookings.edu/blog/the-avenue/2018/03/14/the-us-will-become-minority-white-in-2045-census-projects/*

negative effects on their self-confidence (Foundation for Child Development, 2019). Even affluence does not necessarily protect children from risk. Some children in wealthy families face pressure to achieve and are often left on their own by busy parents. Such children may be at increased risk for substance abuse, anxiety, and depression (Luthar & Latendresse, 2005).

Culture and Race/Ethnicity **Culture** refers to a society's or group's total way of life, including its customs, traditions, laws, knowledge, beliefs, values, language, and physical products, from tools to artworks—all of the behavior and attitudes that are learned, shared, and transmitted among members of a social group. Culture is constantly changing, often through contact with other cultures. Today cultural contact has been enhanced by computers and telecommunications providing almost instantaneous communication across the globe.

culture
A society's or group's total way of life, including customs, traditions, beliefs, values, language, and physical products—all learned behavior, passed on from parents to children.

ethnic group
A group united by ancestry, race, religion, language, or national origins, which contribute to a sense of shared identity.

An **ethnic group** consists of people united by a distinctive culture, ancestry, religion, language, or national origin, all of which contribute to a sense of shared identity and shared attitudes, beliefs, and values. By 2044 ethnic minorities in the United States are expected to become the majority. It is predicted that by 2060, 64 percent of the nation's children will be members of what are now minority groups, and the proportion of Hispanic or Latino/a children—33.5 percent—will be nearly equal to the 35.6 percent who will be non-Hispanic white (Colby & Ortman, 2015; Figure 1.2). An increasing number of the children being born today come from mixed racial or ethnic backgrounds (Alba, 2018). The theoretical and practical implications of these changing demographic trends are yet to be determined.

The United States has always been a nation of immigrants and ethnic groups, but the primary ethnic origins of the immigrant population have shifted from Europe and Canada to Asia and Latin America (Hernandez, 2004). In 2017, almost 14 percent of the population were immigrants (see Window on the World), roughly a quarter of whom are undocumented. Nearly every area in the world is represented among U.S. immigrant populations (Radford & Noe-Bustamante, 2019).

The existence of Marcia and Millie Biggs, who as fraternal twins share approximately 50 percent of their genes, calls into question the concept of race as a biological construct. Ken McKay/ITV/Shutterstock

mar88301_ch01_001-014.indd 9 8/9/20 3:40 PM

window on the world

IMMIGRANT FAMILIES

The United States is a nation of immigrants, known for its cultural diversity and appeals to those seeking refuge, freedom, financial security, or a second chance. In 2017, approximately 14 percent of the U.S. population were immigrants (Radford & Noe-Bustamante, 2019).

The ethnic origins of the immigrant population have shifted significantly over the past 100 years. In 1910, most U.S. immigrants came from Europe and Canada. By 2010, the largest numbers of immigrants were from Mexico, Asia, and the Caribbean. Since that time, the largest percentage increases have occurred in immigration from Southern Asia, the Middle East, and Northern Africa (Camarota & Ziegler, 2016). However, more immigrants come from Mexico (25.3 percent) than from any other country (Radford & Noe-Bustamante, 2019).

Roughly one-fourth (26 percent) of U.S. children lived in immigrant families in 2017, and 88 percent of these children were born in the United States, making them U.S. citizens (Migration Policy Institute, 2019). Children of immigrants are the fastest growing group of children in the United States.

Immigrant families must navigate a different culture, religion, and language, and often different ethics and values. Currently, 23 percent of U.S. immigrants are undocumented (Radford, 2019). Immigrants are more likely to work at low-paying jobs requiring manual labor. Not surprisingly, 15 percent of immigrant families live in poverty and almost 20 percent are uninsured (Radford & Noe-Bustamante, 2019). Though immigration can be difficult, the longer immigrants are in the United States, the more progress they make.

Immigrants bring racial, cultural, and ethnic diversity to the country. This allows Americans to experience different ways of life, languages, religions, and foods. Immigrants also bring innovative ideas and economic benefits. One-fourth of innovative U.S. companies founded between 1995 and 2005 had at least one immigrant in a senior position on product development or management teams (Anderson, 2011). More than half of all patent grants in 2014 were to foreign-born individuals (Grenier, 2014). Immigrants often work in farming, food service, maintenance, construction, and manufacturing industries. Many of these industries would collapse without immigrant labor (Jacobi, 2012). It is sometimes easy to forget the United States was founded by immigrants and what role our ancestors played in that process. Immigration will continue to bring a depth and richness to the nation and its culture.

what's your view

How do you see immigration influencing the United States? How do you imagine life may be different for immigrants 40 years from now?

ethnic gloss
An overgeneralization that obscures or blurs variations between cultural or ethnic groups.

It is important to remember that wide diversity exists within broad ethnic groups. Cuban Americans, South Americans, and Central Americans—all Hispanic Americans—have different histories and cultures and may be of African, European, Native American, or mixed descent. African Americans from the rural South differ from those of Caribbean ancestry. Asian Americans hail from a variety of countries with distinct cultures, from modern industrial Japan to communist China to the remote mountains of Nepal, where many people still practice their ancient way of life. Given this diversity within groups, a term such as *Black* or *Hispanic* can be an **ethnic gloss**—an overgeneralization that obscures or blurs such variations.

The term *race*, historically and popularly viewed as an identifiable biological category, is best defined as a social construct. There is no clear scientific consensus on its definition, and it is impossible to measure reliably (Yudell et al., 2016). Human genetic variation occurs along a broad continuum, and 90 percent of such variation occurs *within* rather than between socially defined races (Bonham et al., 2005; Ossorio & Duster, 2005). Nevertheless, race as a social category remains a factor in research because it makes a difference in "how individuals are treated, where they live, their employment opportunities, the quality of their health care, and whether [they] can fully participate" in their society (Smedley & Smedley, 2005, p. 23).

mar88301_ch01_001-014.indd 10 10/16/20 7:34 PM

NORMATIVE AND NONNORMATIVE INFLUENCES

To understand similarities and differences in development, we need to look at two types of **normative** influences: biological or environmental events that affect many or most people in a society in similar ways and events that touch only certain individuals (Baltes & Smith, 2004).

Normative age-graded influences are highly similar for people in a particular age group. The timing of biological events is fairly predictable within a normal range. For example, people don't experience puberty at age 35 or menopause at 12.

Normative history-graded influences are significant events (such as World War II or the COVID-19 pandemic) that shape the behavior and attitudes of a **historical generation:** a group of people who experience the event at a formative time in their lives. For example, the generations that came of age during the Depression and World War II tend to show a strong sense of social interdependence and trust that has declined among more recent generations (Rogler, 2002). Depending on when and where they live, entire generations may feel the impact of famines, disease, nuclear explosions, or terrorist attacks.

A historical generation is not the same as an age **cohort:** a group of people born at about the same time. A historical generation may contain more than one cohort, but cohorts are part of a historical generation only if they experience major, shaping historical events at a formative point in their lives (Rogler, 2002).

Nonnormative influences are unusual events that have a major impact on *individual* lives because they disturb the expected sequence of the life cycle. They are either typical events that happen at an atypical time of life (such as the death of a parent when a child is young) or atypical events (such as surviving a plane crash). Some of these influences are largely beyond a person's control and may present rare opportunities or severe challenges that the person perceives as turning points. On the other hand, people sometimes help create their own nonnormative life events—say, by deciding to have a baby in their midfifties or taking up a risky hobby such as skydiving—and thus participate actively in their own development. Taken together, the three types of influences—normative age-graded, normative history-graded, and nonnormative—contribute to the complexity of human development.

normative
Characteristic of an event that occurs in a similar way for most people in a group.

historical generation
A group of people strongly influenced by a major historical event during their formative period.

cohort
A group of people born at about the same time.

nonnormative
Characteristic of an unusual event that happens to a particular person or a typical event that happens at an unusual time of life.

imprinting
Instinctive form of learning in which, during a critical period in early development, a young animal forms an attachment to the first moving object it sees, usually the mother.

critical period
Specific time when a given event or its absence has a specific impact on development.

CRITICAL OR SENSITIVE PERIODS

In a well-known study, Konrad Lorenz (1957), an Austrian ethologist, showed that newly hatched goslings will instinctively follow the first moving object they see. This phenomenon is called **imprinting.** Usually, this automatic and irreversible bond is with the mother. When the natural course of events is disturbed, however, other attachments, or none at all, can form. Imprinting, said Lorenz, is the result of a *predisposition toward learning*: the readiness of an organism's nervous system to acquire certain information during a brief *critical period* in early life.

A **critical period** is a specific time when a given event, or its absence, has a specific impact on development. If a necessary event does not occur during a critical period of maturation, normal development will not occur, and the resulting abnormal patterns may be irreversible (Kuhl et al., 2005).

Do human beings experience critical periods? If a pregnant woman receives X-rays, takes certain drugs, or contracts certain diseases, the fetus may show specific ill effects, depending on the nature of the insult, its timing, and characteristics of the fetus itself. However, because many aspects of development, even in

Newborn goslings followed and became attached to the first moving object they saw, which happened to be ethologist Konrad Lorenz. Lorenz called this behavior imprinting. Album/Alamy Stock Photo

mar88301_ch01_001-014.indd 11 8/9/20 3:41 PM

plasticity
(1) Range of modifiability of performance. (2) Modifiability, or "molding," of the brain through experience.

sensitive periods
Times in development when a person is particularly open to certain kinds of experiences.

the physical domain, have been found to show **plasticity,** or modifiability of performance, it may be more useful to think about **sensitive periods,** when a developing person is particularly responsive to certain kinds of experiences (Bruer, 2001).

There is growing evidence that plasticity is not just a general characteristic of development that applies to all members of a species, but that there are individual differences in plasticity of responses to environmental events as well. For example, some children—especially those with difficult temperaments, those who are highly reactive, and those with particular gene variants—may be more profoundly affected by childhood experiences, whether positive or negative, than other children (Belsky & Pluess, 2009). This new research also suggests that characteristics generally assumed to be negative—such as a difficult or reactive temperament—can be adaptive (positive) when the environment is supportive of development. One study found that children who were highly reactive to environmental events showed, as expected, negative responses such as aggression and behavior problems when faced with stressors such as marital conflict in their families. Surprisingly, however, when the levels of family adversity were low, highly reactive children showed even more adaptive profiles than children low in reactivity. These highly reactive children were more prosocial, more engaged in school, and showed lower levels of externalizing symptoms (Obradovic et al., 2010). Research such as this clearly points to a need to reconceptualize the nature of plasticity in early development with an eye toward examining issues of resilience as well as risk. Research in Action discusses how the concepts of critical and sensitive periods apply to language development.

The Life-Span Developmental Approach

Paul B. Baltes (1936–2006) and his colleagues (1987; Baltes & Smith, 2004) have identified seven key principles of a life-span developmental approach that sum up many of the concepts discussed in this chapter.

1. *Development is lifelong*. Development is a lifelong process of change. Each period of the life span is affected by what happened before and will affect what is to come. No period is more or less important than any other.
2. *Development is multidimensional*. It occurs along multiple interacting dimensions—biological, psychological, and social—each of which may develop at varying rates.
3. *Development is multidirectional*. Although we generally think of development as proceeding in a positive direction, people can show gains or losses at any point in the life span.
4. *Relative influences of biology and culture shift over the life span*. The process of development is influenced by both biology and culture, but the balance between these influences changes. Biological abilities, such as sensory acuity and muscular strength and coordination, weaken with age, but cultural supports, such as education, relationships, and technologically age-friendly environments, may help compensate.
5. *Development involves changing resource allocations*. Individuals choose to invest their resources of time, energy, talent, money, and social support in varying ways. The allocation of resources to these three functions changes throughout life as the total available pool of resources decreases. In childhood and young adulthood the bulk of resources typically goes to growth; in old age, to regulation of loss.
6. *Development shows plasticity*. Many abilities, such as memory, strength, and endurance, can be improved significantly with training and practice, even late in life. One of the tasks of developmental research is to discover to what extent particular kinds of development can be modified at various ages.
7. *Development is influenced by the historical and cultural context*. Each person develops within multiple contexts—circumstances or conditions defined in part by maturation and in part by time and place. Human beings not only influence but also are influenced by their historical-cultural context.

mar88301_ch01_001-014.indd 12 8/9/20 3:41 PM

research in action

BABY TALK: CULTURAL DIFFERENCES IN INFANT-DIRECTED SPEECH

Imagine you're cradling a baby in your arms. She gives you a toothless grin as you begin to speak. Do you notice a difference in your speech patterns? Are your words simpler? Do you make silly sounds to attract her attention?

When interacting with a baby, most adults naturally slip into "baby talk," a distinctive speech pattern typically used with preverbal infants. This infant-directed (ID) speech includes simplified grammar, slower tempo, pitch variations, exaggerated sound intonation, and repetition of key words and phrases (Estes & Hurley, 2013; Ma et al., 2011).

American English is the most studied language with respect to ID speech, but there is ample evidence of ID speech patterns cross-culturally. Similarities are also found in prosody (stressed syllables and intonation) across different languages (Broesch & Bryant, 2015; Soderstrom, 2007; Saint-Georges et al., 2013). Although there are some minor differences, both women and men use ID speech patterns (Gergely et al., 2016; Kokkinaki, 2019), a finding that has also been validated cross-culturally (Fernald et al., 1989; Broesch & Bryant, 2018).

Infants find ID speech highly engaging, and it draws their attention to spoken language. Adults speak in this fashion even to newborns (Johnson et al., 2014), and infants as young as 7 weeks display ID speech preferences. In fact, babies pay special attention to ID speech even in languages other than their own (Pegg et al., 1992). A study of mother-infant vocalization across 11 countries suggests that ID speech engages infants in the social function of language. Baby talk captures attention and elicits vocalization in a conversational, turn-taking manner (Bornstein et al., 2015).

ID speech may help convey cultural norms. Fernald and Morikawa (1993) found that American mothers use noun-labeling more frequently ("Look at the car.... Those are wheels."). Japanese mothers use ID speech to emphasize social interactions ("Car goes 'vrooom'.... I give to you.... You give back"). Japanese mothers also emphasized cultural norms of empathy and politeness within ID speech, promoting cultural values of interdependence, connectedness, and harmony (Fernald & Morikawa, 1993). Mastin and Vogt (2016) drew a similar conclusion from a study of Mozambican infants. Rural Mozambicans used more words related to kinship, emphasizing collectivist values even more so than those in urban areas. Another study comparing Canadian and Vietnamese families found language interactions in Canadian families involved more turn-taking, interpreted by the researchers as illustrating the Canadian parents' encouragement of individuality in their children (Ganek et al., 2018).

Despite being common, ID speech is not completely universal. The Gusii of Kenya do not believe it is useful or necessary to speak to infants (Richman et al., 2010). The Ifaluk of Micronesia see no point in talking to babies as it is believed infants lack understanding (Le, 2000), and remote Senegalese villagers express fears that evil spirits will possess babies who are spoken to (Weber et al., 2017; Zeitlin, 2011). As a result, little to no effort is made to speak to infants in these cultures, despite near constant contact with caregivers.

Still, the near ubiquity of ID speech suggests it has a function. ID speech supports the association of sounds of words with meanings (Estes & Hurley, 2013; Ma et al., 2011; Bergelson & Swingley, 2012), increases long-term word recognition (Singh et al., 2009), and causes increased neural activity (Zangl & Mills, 2007). Researchers and theorists believe the attention-grabbing features of ID speech exist to orient babies to spoken language, and the simplified and repetitive nature of ID speech is a supportive framework for language acquisition. We talk to babies this way and they love it as much as they do because those features make it easier to learn language.

Cross-cultural research helps us to tease out what aspects of our behavior are universal—common to humans everywhere—or culturally specific—the product of our upbringing. Without being able to compare the findings from different cultures, we would not know if the American findings on ID speech were a quirk of U.S. culture or a deeper human truth. To truly understand the complexity of human development, we cannot rely on the information from one culture alone.

what's your view

What other aspects of childcare and interaction do you think differ across cultures? What cultural norms are being transmitted by those differences?

mar88301_ch01_001-014.indd 13 9/22/20 11:24 AM

summary and key terms

Human Development: An Ever-Evolving Field

- Human development is the scientific study of processes of change and stability and has important real-world applications.
- Life-span development has become a field of study.
- The study of human development seeks to describe, explain, predict, and, when appropriate, intervene in development.
- Students of human development draw on multiple disciplines.
- Methods of studying human development are still evolving, making use of advanced technologies.

human development, life-span development

The Study of Human Development: Basic Concepts

- Developmental scientists study change and stability in all domains of development throughout the life span.
- The three major domains of development are physical, cognitive, and psychosocial. Each affects the others.
- The concept of periods of development is a social construction.

physical development, cognitive development, psychosocial development, social construction

Influences on Development

- Influences on development come from both heredity and environment. Many typical changes during childhood are related to maturation. Individual differences tend to increase with age.
- In some societies, the nuclear family predominates; in others, the extended family.
- Socioeconomic status (SES) affects developmental processes and outcomes through the quality of home and neighborhood environments, nutrition, medical care, and schooling. Multiple risk factors increase the likelihood of poor outcomes.
- Important environmental influences stem from culture, race/ethnicity, and historical context. Race is a social construction. Ethic gloss is an overgeneralization that can blur differences between racial or ethnic groups.
- Influences may be normative (age-graded or history-graded) or nonnormative.
- There is evidence of critical or sensitive periods for certain kinds of early development.

individual differences, heredity, environment, maturation, nuclear family, extended family, socioeconomic status (SES), risk factors, culture, ethnic group, ethnic gloss normative, historical generation, cohort, nonnormative, imprinting, critical period, plasticity, sensitive periods

The Life-Span Developmental Approach

- The principles of the life-span developmental approach include the propositions that (1) development is lifelong, (2) development is multidimensional, (3) development is multidirectional, (4) the relative influences of biology and culture shift over the life span, (5) development involves changing resource allocations, (6) development shows plasticity, and (7) development is influenced by the historical and cultural context.

Design Credit: (globe) janrysavy/Getty Images

mar88301_ch01_001-014.indd 14 9/22/20 11:24 AM

Theory and Research

chapter 2

Andrew Hetherington/Redux

In this chapter we present an overview of the major theories of human development and of the research methods used to study it. We explore important issues and theoretical perspectives that underlie much research in human development, and we look at how researchers gather and assess information. Ethical issues that may arise in research are also addressed.

learning objectives

Describe the purpose of theories in research and two theoretical issues on which developmental scientists differ.

Summarize the main theories of human development.

Describe the methods developmental researchers use to collect data and the advantages and disadvantages of each.

Explain ethical guidelines for researchers.

Basic Theoretical Issues

theory
Coherent set of logically related concepts that seeks to organize, explain, and predict data.

A scientific **theory** of development is a set of logically related concepts or statements that seek to describe and explain development and to predict the kinds of behavior that might occur under certain conditions. Theories organize and explain *data*, the information gathered by research. As painstaking research adds, bit by bit, to the body of knowledge, theoretical concepts help us make sense of, and see connections between, isolated pieces of data.

hypotheses
Possible explanations for phenomena, used to predict the outcome of research.

Theory and research are interwoven strands in the fabric of scientific study. Theories inspire further research and predict its results. They do this by generating **hypotheses,** explanations or predictions that can be tested by further research. Research can indicate whether a theory is accurate in its predictions but cannot conclusively show a theory to be true. Science is built upon falsifiability, and no theory is *ever* proven. However, theories can be *disproved*. Sometimes research supports a hypothesis and the theory on which it was based. At other times, scientists must modify their theories to account for unexpected data. This flexibility is one of the greatest strengths of science.

The way theorists explain development depends in part on their assumptions about two basic issues: (1) whether people are active or reactive in their own development and (2) whether development is continuous or occurs in stages.

ISSUE 1: IS DEVELOPMENT ACTIVE OR REACTIVE?

Psychology is an outgrowth of philosophy in many ways, and philosophers have frequently grappled with questions of psychology and development.

There have been a variety of perspectives. For example, the eighteenth-century English philosopher John Locke held that a young child is a *tabula rasa*—a "blank slate"—upon which society writes. How the child developed, in either positive or negative ways, depended entirely on experiences. In contrast, the French philosopher Jean Jacques Rousseau believed that children are born "noble savages" who develop according to their own positive natural tendencies if not corrupted by society. This debate remains important today, although in modern terms we speak of environmental influences and heredity.

Additional philosophical debates about development, and the same basic issues philosophers argued about, are reflected in the psychological theories of today. Psychologists today debate active and reactive development. Psychologists who believe in reactive development conceptualize the developing child as a hungry sponge that soaks up experiences and is shaped by this input over time. Psychologists who believe in active development argue that people create experiences for themselves and are motivated to learn about the world around them. Things aren't just happening to them; they are involved in making their world what it is.

mechanistic model
Model that views human development as a series of predictable responses to stimuli.

Mechanistic Model Locke's view was the forerunner of the **mechanistic model.** In this model, people are like machines that react to environmental input (Pepper, 1961).

Machines do not operate of their own will; they react automatically to physical forces or inputs. Fill a car with gas, turn the ignition key, press the accelerator, and the car will move. In the mechanistic view, human behavior is much the same: It results from the operation of biological parts in response to external or internal stimuli. If we know enough about how the human "machine" is put together and about the forces acting on it, we can predict what the person will do.

Mechanistic researchers want to identify the factors that make people behave as they do. For example, to explain why some children are more competitive than others and why some are more cooperative, a mechanistic theorist might look for cultural influences such as where a culture falls on the individualism/collectivism scale.

organismic model
Model that views human development as internally initiated by an active organism and as occurring in a sequence of qualitatively different stages.

Organismic Model Rousseau was the precursor of the **organismic model.** This model sees people as active, growing organisms that set their own development in motion (Pepper, 1961). The driving force for change is internal. Environmental influences do not

mar88301_ch02_015-039.indd 16 8/9/20 3:47 PM

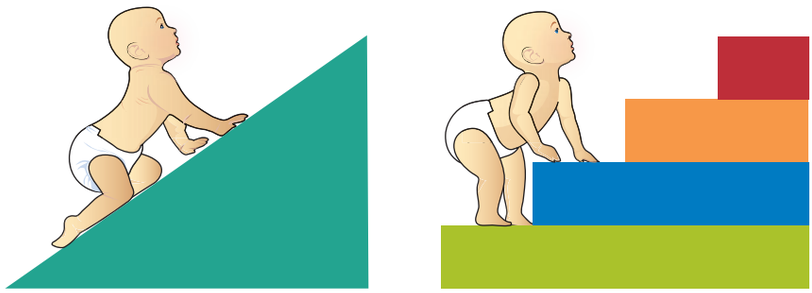


FIGURE 2.1
Quantitative and Qualitative Change

A major difference among developmental theories is (a) whether it proceeds continuously, as learning theorists and information-processing theorists propose, or (b) whether development occurs in distinct stages, as Freud, Erikson, and Piaget maintained.

cause development, though they can speed or slow it. Development is believed to have an underlying, orderly structure, though it may not be obvious from moment to moment.

Because human behavior is viewed as an organic whole, it cannot be predicted by breaking it down into simple responses to environmental stimulation. An organismic theorist, in studying why some students drink too much, looks at what kinds of situations they choose to participate in, and with whom. Do they choose friends who prefer to party or to study?

ISSUE 2: IS DEVELOPMENT CONTINUOUS OR DISCONTINUOUS?

The mechanistic and organismic models also differ on the second issue: Is development *continuous*, that is, gradual and incremental, or *discontinuous*, that is, abrupt or uneven? Mechanist theorists see development as continuous: as occurring in small incremental stages (Figure 2.1a). Development is always governed by the same processes and involves the gradual refinement and extension of early skills into later abilities, allowing one to make predictions about future characteristics on the basis of past performance. This type of change is known as **quantitative change**—a change in number or amount, such as height, weight, or vocabulary size.

quantitative change
Changes in number or amount, such as in height, weight, size of vocabulary, or frequency of communication.

Organismic theorists see development as discontinuous; as marked by the emergence of new phenomena that could not be easily predicted on the basis of past functioning. Development at different points in the life span is, in this view, fundamentally different in nature. It is a change in kind, structure, or organization, not just in number. This type of change is known as **qualitative change.**

qualitative change
Discontinuous changes in kind, structure, or organization.

Organismic theorists are proponents of *stage theories* in which development is seen as occurring in a series of distinct stages, like stairsteps (Figure 2.1b). At each stage, what is going on is different from previous stages. Moreover, stages build upon each other. Stages cannot be skipped, and development only proceeds in a positive direction. It is believed that these processes are universal and account for the development of all humans everywhere, although the particular timing may vary a bit.

Theoretical Perspectives

Five major perspectives underlie much influential theory and research on human development. Following is a general overview of each of these perspectives. These are summarized in Table 2.1.

PERSPECTIVE 1: PSYCHOANALYTIC

Sigmund Freud (1856–1939) was a Viennese physician who was the originator of the **psychoanalytic perspective.** He believed in reactive development and qualitative change.

psychoanalytic perspective
View of human development as shaped by unconscious forces that motivate human behavior.

mar88301_ch02_015-039.indd 17 8/9/20 3:47 PM

TABLE 2.1 Five Perspectives on Human Development

Perspective	Important Theories	Basic Propositions	Stage-Oriented	Causal Emphasis	Active/Reactive Individual
Psychoanalytic	Freud's psychosexual theory	Behavior is controlled by powerful unconscious urges.	Yes	Innate factors modified by experience	Reactive
	Erikson's psychosocial theory	Personality is influenced by society and develops through a series of crises.	Yes	Interaction of innate and experiential factors	Active
Learning	Behaviorism, or traditional learning theory (Pavlov, Skinner, Watson)	People are responders; the environment controls behavior.	No	Experience	Reactive
	Social learning, or social cognitive theory (Bandura)	Children learn by observation and imitation; they are active contributors to learning.	No	Experience modified by innate factors	Active and reactive
Cognitive	Piaget's cognitive stage theory	Qualitative changes in thought occur between infancy and adolescence. Children are active initiators of development.	Yes	Interaction of innate and experiential factors	Active
	Vygotsky's sociocultural theory	Social interaction is central to cognitive development.	No for general stages; yes for concept formation.	Experience	Active
	Information-processing theory	Human beings are processors and manipulators of symbols.	No	Interaction of innate and experiential factors	Active
Contextual	Bronfenbrenner's bioecological theory	Development occurs through interaction between a developing person and five interlocking contextual systems of influences.	No	Interaction of innate and experiential factors	Active
Evolutionary/ sociobiological	Evolutionary psychology; Bowlby's attachment theory	Human beings are the product of adaptive processes; there is an evolutionary basis for behavior and learning.	No	Interaction of innate and experiential factors	Active and reactive (theorists vary)

Freud proposed that humans were born with a series of innate, biologically based drives such as hunger, sex, and aggression. He thought that people were motivated to satisfy these drives, and that much of development involved learning how to do so in socially acceptable ways. In addition, Freud believed that early experiences shaped later functioning. Freud also promoted the idea that what we consciously know about and experience is only the small tip of the iceberg of who we are.

Psychosexual Development: Sigmund Freud Freud (1953, 1964a, 1964b) believed that people are born with biological drives that must be redirected to make it possible

mar88301_ch02_015-039.indd 18 8/9/20 3:47 PM

to live in society. He proposed three hypothetical parts of the personality: the *id*, the *ego*, and the *superego*. Newborns are governed by the *id*, which operates under the *pleasure principle*—the drive to seek immediate satisfaction of their needs and desires. When gratification is delayed, as it is when infants have to wait to be fed, they begin to see themselves as separate from the outside world. The *ego*, which represents reason, develops gradually during the first year or so of life and operates under the *reality principle*. The ego's aim is to find realistic ways to gratify the id that are acceptable to the *superego*, which develops at about age 5 or 6. The *superego* includes the conscience and incorporates socially approved "shoulds" and "should nots" into the child's value system. The superego is highly demanding; if its standards are not met, a child may feel guilty and anxious. The ego mediates between the impulses of the id and the demands of the superego.

Freud proposed that personality forms through unconscious childhood conflicts between the inborn urges of the id and the requirements of civilized life. These conflicts occur in a sequence of five stages of **psychosexual development** (Table 2.2), in which sensual pleasure shifts from one body zone to another—from the mouth to the anus and then to the genitals. At each stage, the behavior that is the chief source of gratification (or frustration) changes.

psychosexual development
In Freudian theory, an unvarying sequence of stages of childhood personality development in which gratification shifts from the mouth to the anus and then to the genitals.

According to Freud, if children receive too little or too much gratification in the first three stages, they are at risk of *fixation*, an arrest in development that can show up in adult personality. Babies whose needs are not met during the *oral stage*, when feeding is the main source of pleasure, may grow up to become nail-biters or smokers. A person who, as a toddler, had too-strict toilet training may be fixated at the *anal stage*, and be obsessively clean, rigidly tied to schedules and routines, or defiantly messy.

A key event occurs in the *phallic stage* of early childhood. Boys develop sexual attachment to their mothers, and girls to their fathers, and they have aggressive urges toward the same-sex parent, whom they regard as a rival. Freud called these developments the *Oedipus* and *Electra complexes*.

Children eventually resolve their anxiety over these feelings by identifying with the same-sex parent and move into the *latency stage* of middle childhood, a period of relative emotional calm and intellectual and social exploration.

The *genital stage*, the final stage, lasts throughout adulthood. The sexual urges repressed during latency now resurface to flow in socially approved channels, which Freud defined as heterosexual relations with persons outside the family of origin.

Freud's theory made historic contributions; however, many of Freud's ideas now are widely considered obsolete or are impossible to investigate scientifically. Psychologists today reject his narrow emphasis on sexual and aggressive drives to the exclusion of other influences. Nevertheless, several of his central themes have stood the test of time. Freud made us aware of the importance of unconscious thoughts, feelings, and motivations; the role of childhood experiences in forming personality; the ambivalence of emotional responses, the role of mental representations of the self and others in the establishment of intimate relationships; and the path of typical development from an immature, dependent state to a mature, interdependent state. In all these ways, Freud left an indelible mark on psychoanalysis and developmental psychology (Gedo, 2001; Westen, 1998).

We need to remember that Freud based his theories about typical development on a clientele of Victorian upper-middle-class adults, mostly women, in therapy. His concentration on the influences of sexual urges and early experience did not take into account other, and later, influences on personality—including the influences of society and culture, which many heirs to the Freudian tradition, such as Erik Erikson, stress and which psychologists today acknowledge are of fundamental importance.

Psychosocial Development: Erik Erikson Erik Erikson (1902–1994) modified and extended Freudian theory and was a pioneer in taking a life-span perspective. Note that both theorists, as they proposed stage theories, believed in qualitative change.

mar88301_ch02_015-039.indd 19 8/9/20 3:47 PM

TABLE 2.2 Developmental Stages According to Various Theories

Psychosexual Stages (Freud)	Psychosocial Stages (Erikson)	Cognitive Stages (Piaget)
Oral (birth to 12–18 months). Baby's source of pleasure involves the mouth (sucking and feeding).	*Basic trust versus mistrust (birth to 12–18 months).* Baby develops sense of whether world is a good and safe place. Virtue: hope.	*Sensorimotor (birth to 2 years).* Infant learns about the environment through sensory and motor activity.
Anal (12–18 months to 3 years). Child derives pleasure from withholding and expelling feces. Zone of gratification is anal region, thus toilet training is an important activity.	*Autonomy versus shame and doubt (12–18 months to 3 years).* Child develops a balance of independence and self-sufficiency over shame and doubt. Virtue: will.	*Preoperational (2 to 7 years).* Child develops a representational system and uses symbols to represent people, places, and events. Language and imaginative play are important manifestations of this stage. Thinking is still not logical.
Phallic (3 to 6 years). Child develops sexual feelings for other-sex parents leading to fear and identification with same-sex parent. Superego develops. Zone of gratification shifts to genitals.	*Initiative versus guilt (3 to 6 years).* Child develops initiative when trying out new activities and is not overwhelmed by guilt. Virtue: purpose.	
Latency (6 years to puberty). Time of relative calm between more turbulent stages.	*Industry versus inferiority (6 years to puberty).* Child must learn skills of the culture or face feelings of incompetence. Virtue: skill.	*Concrete operations (7 to 11 years).* Child can solve problems logically if they are focused on the here and now but cannot think abstractly.
Genital (puberty through adulthood). Reemergence of sexual impulses of phallic stage, channeled into mature adult sexuality.	*Identity versus identity confusion (puberty to young adulthood).* Adolescent must determine sense of self or experience role confusion. Virtue: fidelity. *Intimacy versus isolation (young adulthood).* Person makes commitments to others or may suffer from isolation and self-absorption. Virtue: love. *Generativity versus stagnation (middle adulthood).* Mature adult contributes to the next generation or risks personal impoverishment. Virtue: care. *Integrity versus despair (late adulthood).* Older adult achieves acceptance of death, or else despairs over inability to relive life. Virtue: wisdom.	*Formal operations (11 years through adulthood).* Person can think abstractly, deal with hypothetical situations, and think about possibilities.

Note: All ages are approximate.

psychosocial development
In Erikson's eight-stage theory, the socially and culturally influenced process of development of the ego, or self.

Erikson's (1950, 1982) theory of **psychosocial development** covers eight stages across the life span (refer to Table 2.2). Each stage involves what Erikson originally called a *crisis* in personality*—a major psychosocial challenge that is particularly important at that time. These issues must be satisfactorily resolved for healthy ego development.

Each stage requires balancing a positive and a negative tendency. The positive quality should dominate, but some degree of the negative quality is needed as well. The critical theme of infancy, for example, is *basic trust versus basic mistrust*. People need to trust the world and the people in it. However, they also need some mistrust to protect themselves from danger. The successful outcome of each stage is the development of a particular *virtue*, or strength—in this case, the virtue of *hope*.

*Erikson broadened the concept of "crisis" and later referred instead to conflicting or competing tendencies.

mar88301_ch02_015-039.indd 20 8/9/20 3:47 PM

Successful resolution of each crisis puts the person in a particularly good position to address the next crisis, a process that occurs iteratively across the life span. So, for example, a child who successfully develops a sense of trust in infancy would be well prepared for the development of a sense of autonomy—the second psychosocial challenge—in toddlerhood. After all, if you feel that others have your back, you are more likely to try to develop your skills knowing that they will be there to comfort you if you fail.

While the crises that Erikson outlined were particular to his place and time—for example, not all cultures have a period of time that could be characterized as adolescence—Erikson argued for the influence of social and cultural factors on development. He highlighted the social clock, the conventional, culturally preferred timing of important life events. Moreover, Erikson's focus on lifelong development enriched the field of psychology and has been one of his enduring contributions.

PERSPECTIVE 2: LEARNING

The **learning perspective** maintains that development results from *learning*, a long-lasting change in behavior based on experience or adaptation to the environment. Learning theorists were not interested in the inner workings of the mind and preferred to focus on observable behaviors that could be counted and measured precisely, as well as tested in the laboratory in an objective manner.

learning perspective
View of human development that holds that changes in behavior result from experience or from adaptation to the environment.

Psychologists at this time viewed the mind as *tabula rasa,* a blank slate upon which experience could write. Thus, differences between individuals were ascribed to their different experiences. This implied that cultural and contextual influences were primary in importance. Learning theorists also saw development as continuous and incremental, and as capable of being influenced by changing environmental contingencies across the entire life span. Two important learning theories are *behaviorism* and *social learning theory*.

Behaviorism

Behaviorism is a mechanistic theory that describes observed behavior as a predictable response to experience. Behaviorists consider development as reactive and continuous. Behavioral research focuses on *associative learning*, in which a mental link is formed between two events. Two kinds of associative learning are *classical conditioning* and *operant conditioning*.

behaviorism
Learning theory that emphasizes the predictable role of environment in causing observable behavior.

The Russian physiologist Ivan Pavlov (1849–1936) devised experiments in which dogs learned to salivate at the sound of a bell that rang at feeding time. These experiments were the foundation for **classical conditioning,** in which a response (in this case, salivation) to a stimulus (the bell) is evoked after repeated association with a stimulus that normally elicits the response (food).

classical conditioning
Learning based on associating a stimulus that does not ordinarily elicit a response with another stimulus that does elicit the response.

The American behaviorist John B. Watson (1878–1958) applied such stimulus-response theories to children, claiming that he could mold any infant in any way he chose. In one of the earliest and most famous demonstrations of classical conditioning in human beings (Watson & Rayner, 1920), he taught an 11-month-old baby known as "Little Albert" to fear furry white objects. In this study, Albert was exposed to a loud noise that frightened him whenever he reached for a rat. After repeated pairings of the rat with the loud noise, Albert whimpered with fear when he saw the rat. Albert also started showing fear responses to white rabbits and cats, and the beards of elderly men. The study, although unethical, demonstrated that fear could be conditioned.

Classical conditioning occurs throughout life. Fear responses to objects like a dog may be the result of a bad experience. Much advertising is based upon attempts to condition associations between products (like a car) and positive stimuli (like an attractive person).

Operant Conditioning Julio lies in his crib. When he starts to babble, his mother smiles and repeats the syllables. Julio learns that his behavior (babbling) can produce a desirable consequence (loving attention from a parent), and so he keeps babbling to attract his mother's attention. An originally accidental behavior (babbling) has become a conditioned response.

mar88301_ch02_015-039.indd 21 8/9/20 3:47 PM

operant conditioning
Learning based on association of behavior with its consequences.

This type of learning is called **operant conditioning** because the individual learns from the consequences of "operating" on the environment. Unlike classical conditioning, operant conditioning involves voluntary behavior, such as Julio's babbling, and involves the consequences rather than the predictors of behavior.

reinforcement
The process by which a behavior is strengthened, increasing the likelihood that the behavior will be repeated.

punishment
The process by which a behavior is weakened, decreasing the likelihood of repetition.

The American psychologist B. F. Skinner (1904–1990) argued that an organism—animal or human—will tend to repeat a response that has been reinforced by desirable consequences and will suppress a response that has been punished. Thus **reinforcement** is the process by which a behavior is strengthened, *increasing* the likelihood that the behavior will be repeated. In Julio's case, his mother's attention reinforces his babbling. **Punishment** is the process by which a behavior is weakened, *decreasing* the likelihood of repetition. If Julio's mother frowned when he babbled, he would be less likely to babble again.

Reinforcement is most effective when it immediately follows a behavior. If a response is no longer reinforced, it will eventually be *extinguished*, that is, return to its original (baseline) level. If, after a while, no one repeats Julio's babbling, he may babble less often than if his babbles still brought reinforcement.

Although Skinnerian psychology has been useful in helping us understand how to eliminate undesirable behaviors or instill desirable behaviors, it is limited in application. As an overarching theory of development, it falls short. For example, it does not adequately address individual differences or biologically influenced behavioral patterns.

social learning theory
Theory that behaviors are learned by observing and imitating models. Also called *social cognitive theory*.

reciprocal determinism
Bandura's term for bidirectional forces that affect development.

Social Learning (Social Cognitive) Theory The American psychologist Albert Bandura (b. 1925) developed many of the principles of **social learning theory.** Whereas behaviorists see the environment as the chief impetus for development, Bandura (1977, 1989) suggests that the impetus for development is bidirectional. Bandura called this concept **reciprocal determinism**—the person acts on the world as the world acts on the person.

observational learning
Learning through watching the behavior of others.

Classic social learning theory maintains that people learn appropriate social behavior chiefly by observing and imitating models—that is, by watching other people. For example, by watching her older sister get disciplined for stealing a cookie cooling on the counter, Clara can learn to restrain herself from doing the same thing. This process is called **observational learning,** or *modeling*. Note that this is an active process, and that it can occur even if a person does not imitate the observed behavior.

Bandura's (1989) updated version of social learning theory is *social cognitive theory*. The change of name reflects a greater emphasis on cognitive processes as central to development. Cognitive processes are at work as people observe models, learn *chunks* of behavior, and mentally put the chunks together into complex new behavior patterns. Rita, for example, imitates the toes-out walk of her dance teacher but models her dance steps after those of Carmen, a slightly more advanced student. Even so, she develops her own style of dancing by putting her observations together into a new pattern.

Through feedback on their behavior, children gradually form standards for judging their actions and become more selective in choosing models who demonstrate those standards. They also begin to develop a sense of **self-efficacy,** or confidence in their ability to exert control.

self-efficacy
Sense of one's capability to master challenges and achieve goals.

PERSPECTIVE 3: COGNITIVE

cognitive perspective
View that thought processes are central to development.

The **cognitive perspective** focuses on thought processes and the behavior that reflects those processes. This perspective encompasses both organismic and mechanistically influenced theories. It includes the cognitive-stage theory of Piaget, Vygotsky's sociocultural theory of cognitive development, and the information-processing approach.

cognitive-stage theory
Piaget's theory that children's cognitive development advances in a series of four stages involving qualitatively distinct types of mental operations.

Cognitive-Stage Theory: Jean Piaget Our understanding of how children think owes a great deal to the work of the Swiss theoretician Jean Piaget (1896–1980). Through his careful observations and thoughtful questions, Piaget's **cognitive-stage theory** reintroduced the concept of scientific inquiry into mental states. Piaget viewed development organismically, as the product of children's efforts to understand and act on their world, and as discontinuous and occurring in stages.

mar88301_ch02_015-039.indd 22 8/9/20 3:47 PM

Piaget suggested that cognitive development begins with an inborn ability to adapt to the environment. By rooting for a nipple, manipulating a toy, or exploring the boundaries of a room, young children learn about their environment and become more competent over time. This cognitive growth occurs through three interrelated processes: *organization, adaptation*, and *equilibration*.

Organization is the tendency to create categories, such as birds, by observing the characteristics that individual members of a category, such as sparrows and cardinals, have in common. According to Piaget, people create increasingly complex cognitive structures called **schemes,** ways of organizing information about the world. As children acquire more information, their schemes become more and more complex. Take sucking, for example. A newborn infant has a simple scheme for sucking but soon develops varied schemes for how to suck at the breast, a bottle, or a thumb. The infant may have to open her mouth wider, or turn her head to the side, or suck with varying strength. Schemes are originally concrete in nature (e.g., how to suck on objects) and become increasingly abstract over time (e.g., what a dog is).

organization
Piaget's term for the creation of categories or systems of knowledge.

schemes
Piaget's term for organized patterns of thought and behavior used in particular situations.

Adaptation is Piaget's term for how children handle new information in light of what they already know. Adaptation occurs through two complementary processes: (1) **assimilation,** taking in new information and incorporating it into existing cognitive structures, and (2) **accommodation,** adjusting one's cognitive structures to fit the new information.

How does the shift from assimilation to accommodation occur? Piaget argued that children strive for **equilibration** between their cognitive structures and new experiences. Children want what they understand of the world to match what they observe around them. When children's understanding of the world does not match what they are experiencing, they find themselves in a state of disequilibrium, an uncomfortable motivational state that pushes children into accommodation. For example, Aiko knows what birds are and sees a plane for the first time. She labels the plane a "bird" (assimilation). Over time Aiko notes differences between planes and birds, which makes her somewhat uneasy (disequilibrium) and motivates her to change her understanding (accommodation) and provide a new label for the plane. She then is at equilibrium. Throughout life, the quest for equilibrium is the driving force behind cognitive growth.

adaptation
Piaget's term for adjustment to new information about the environment, achieved through processes of assimilation and accommodation.

assimilation
Piaget's term for incorporation of new information into an existing cognitive structure.

accommodation
Piaget's term for changes in a cognitive structure to include new information.

equilibration
Piaget's term for the tendency to seek a stable balance among cognitive elements; achieved through a balance between assimilation and accommodation.

Jean Piaget studied children's cognitive development by observing and talking with them in many settings, asking questions to find out how their minds worked.
Patrick Grehan/Corbis Historical/Getty Images

Piaget described cognitive development as occurring in four universal, qualitatively different stages (listed in Table 2.2) driven by maturational processes. From infancy through adolescence, mental operations evolve from learning based on simple sensory and motor activity to logical, abstract thought.

Piaget's observations have yielded much information and some surprising insights. Piaget has shown us that children's minds are not miniature adult

mar88301_ch02_015-039.indd 23 8/9/20 3:48 PM

According to Lev Vygotsky, children learn through social interaction. Heritage Images/Hulton Archive/Getty Images

minds. Knowing how children think makes it easier for parents and teachers to understand and teach them. However, Piaget seems to have seriously underestimated the abilities of infants and children. Some contemporary psychologists also question his distinct stages, pointing instead to evidence that cognitive development is more gradual and continuous (Courage & Howe, 2002). Further, cross-cultural research indicates that performance on formal reasoning tasks is as much a function of culture as it is of development; people from industrialized societies who have participated in a formal educational system show better performance on those tasks (Buck-Morss, 1975). Last, research on adults suggests that Piaget's focus on formal logic as the climax of cognitive development is too narrow. It does not account for the emergence of such mature abilities as practical problem solving, wisdom, and the capacity to deal with ambiguous situations.

Sociocultural Theory: Lev Vygotsky The Russian psychologist Lev Semenovich Vygotsky (1896–1934) focused on the social and cultural processes that guide children's cognitive development. Vygotsky's (1978) **sociocultural theory,** like Piaget's theory, stresses children's active engagement with their environment. However, Vygotsky saw cognitive growth as a *collaborative* process. People, said Vygotsky, learn through social interaction, which occurs within their particular cultural context. They acquire cognitive skills as part of their induction into a way of life. These shared activities help children internalize their society's modes of thinking and behaving. Vygotsky placed special emphasis on *language*, not merely as an expression of knowledge and thought but as an essential tool for learning and thinking about the world.

sociocultural theory
Vygotsky's theory of how contextual factors affect children's development.

zone of proximal development (ZPD)
Vygotsky's term for the difference between what a child can do alone and what the child can do with help.

According to Vygotsky, adults or more advanced peers must help direct and organize a child's learning before the child can master and internalize it. This guidance is most effective in helping children cross the **zone of proximal development (ZPD),** the gap between what they are already able to do by themselves and what they can accomplish with assistance. Sensitive and effective instruction, then, should be aimed at the ZPD and increase in complexity as the child's abilities improve. Responsibility for directing learning gradually shifts to the child, such as when an adult teaches a child to float: The adult first supports the child in the water and then lets go gradually as the child learns to relax into a horizontal position. **Scaffolding** is the support that parents, teachers, or others give a child in doing a task until the child can do it alone and it helps children work at the high end of their ZPD. The particular skills, tasks, or patterns of behavior that a child learns are shaped by cultural context. Thus, children from different cultures will follow different paths of development by virtue of their unique shared interactions with other cultural partners.

scaffolding
Temporary support to help a child master a task.

Vygotsky's theory has important implications for education and for cognitive testing. Tests that focus on a child's potential for learning provide a valuable alternative to standard intelligence tests, and many children may benefit from the sort of expert guidance Vygotsky prescribes. Moreover, Vygotsky's ideas have successfully been implemented in preschool children's curricula and show great promise for promoting the development of self-regulation, which affects later academic achievement (Barnett et al., 2008). Last, Vygotsky's theory highlights the importance of culture to development. He recognized that there are as many ways to successfully raise a child as there are different cultural experiences, values, and skills to be learned.

The Information-Processing Approach The **information-processing approach** seeks to explain cognitive development by analyzing the processes involved in making sense of incoming information and performing tasks effectively: such processes include attention, memory, planning strategies, decision making, and goal setting. The information-processing approach is not a single theory but a framework that supports a wide range of theories and research.

information-processing approach
Approach to the study of cognitive development that analyzes processes involved in perceiving and handling information.

Some information-processing theorists compare the brain to a computer: There are certain inputs (such as sensory impressions) and certain outputs (such as behaviors). Information-processing theorists are interested in what happens in the middle. Why does the same input sometimes result in different outputs? In large part, information-processing

mar88301_ch02_015-039.indd 24 8/9/20 3:59 PM

researchers use observational data to *infer* what goes on between a stimulus and a response. For example, they may ask a person to recall a list of words and then observe any difference in performance if the person repeats the list over and over before being asked to recall the words or is kept from doing so. Through such studies, some information-processing researchers have developed *computational models* or flowcharts that analyze the specific steps people go through in gathering, storing, retrieving, and using information.

Like Piaget, information-processing theorists see people as active thinkers about their world. Unlike Piaget, they view development as continuous and incremental rather than as occurring in stages. They note age-related increases in the speed, complexity, and efficiency of mental processing and in the amount and variety of material that can be stored in memory.

PERSPECTIVE 4: CONTEXTUAL

According to the **contextual perspective,** development can be understood only in its social context. Contextualists see the individual not as a separate entity interacting with the environment, but as an inseparable part of it. (Vygotsky's sociocultural theory, which is discussed as part of the cognitive perspective, also can be classified as contextual.)

contextual perspective
View of human development that sees the individual as inseparable from the social context.

The American psychologist Urie Bronfenbrenner's (1917–2005) **bioecological theory** (1979, 1986, 1994) focused not just on immediate influences, as do most psychological approaches, but also on the wider circles of interacting influences of development. Bronfenbrenner identified five levels of environmental influence, ranging from very intimate to very broad (Figure 2.2). He argued that in order to understand the complexity of influences on development, we must see a person within the context of these multiple environments. For instance, we cannot look at the behavior of an individual child without considering the cultural context in which that child is embedded.

bioecological theory
Bronfenbrenner's approach to understanding processes and contexts of human development that identifies five levels of environmental influence.

A *microsystem* is the everyday environment of home, school, work, or neighborhood, including face-to-face relationships with spouse, children, parents, friends, classmates, teachers, employers, or colleagues.

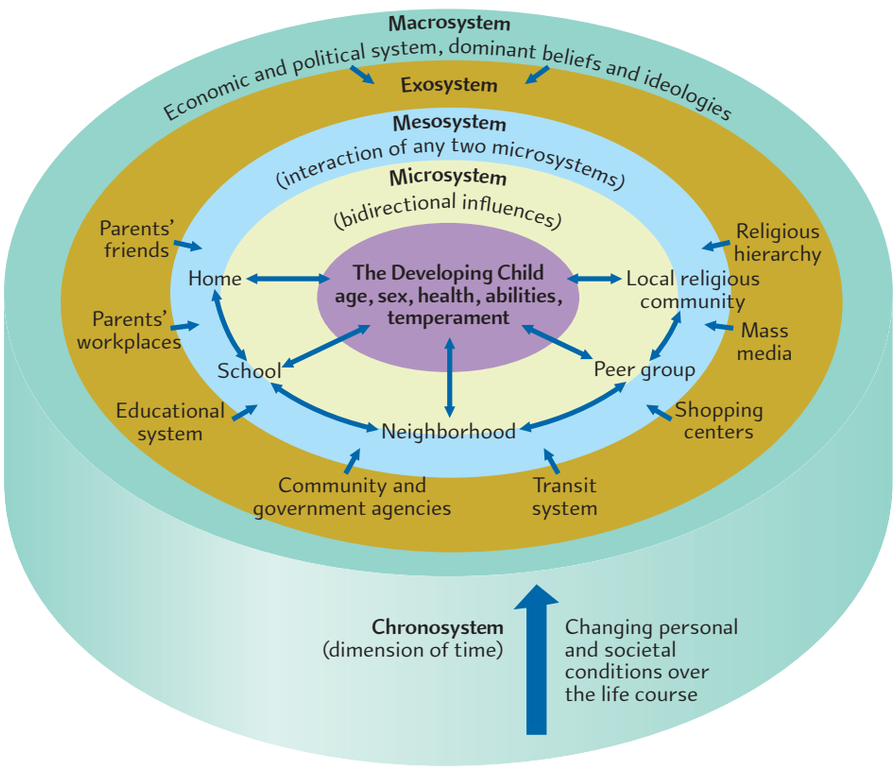


FIGURE 2.2
Bronfenbrenner's Bioecological Theory

Concentric circles show five levels of environmental influence on the individual, from the most intimate environment (the microsystem) to the broadest (the chronosystem)—all within the perpendicular dimension of time.

mar88301_ch02_015-039.indd 25 8/9/20 3:59 PM

The *mesosystem* is the interlocking of various microsystems. For example, a parent's bad day at work might affect interactions with a child later that evening in a negative way. Despite never having actually gone to the workplace, the child is still affected by it.

The *exosystem* consists of interactions between a microsystem and an outside system or institution. For example, different countries have policies on what type, if any, of maternal or paternal leave accommodations are available for new parents. Thus governmental policies trickle down and can affect a child's day-to-day experiences.

The *macrosystem* consists of overarching cultural patterns, such as dominant beliefs, ideologies, and economic and political systems. How is an individual affected by living in a capitalist or socialist society?

Finally, the *chronosystem* adds the dimension of time: change or constancy in the person and the environment. Time marches on, and, as it does, changes occur. These can include changes in family composition, place of residence, or parents' employment, as well as larger events such as wars, ideology, political system, and economic cycles.

According to Bronfenbrenner, a person is not merely an outcome of development but is also a shaper of it. People affect their development through their biological and psychological characteristics, talents and skills, disabilities, and temperament.

By looking at systems that affect individuals in and beyond the family, this bioecological approach helps us to see the variety of influences on development. The contextual perspective also reminds us that findings about the development of people in one culture or in one group within a culture may not apply equally to people in other societies or cultural groups.

PERSPECTIVE 5: EVOLUTIONARY/SOCIOBIOLOGICAL

evolutionary/sociobiological perspective
View of human development that focuses on evolutionary and biological bases of behavior.

ethology
Study of distinctive adaptive behaviors of species of animals that have evolved to increase survival of the species.

The **evolutionary/sociobiological perspective** focuses on evolutionary and biological bases of behavior. Influenced by Darwin's theory of evolution, it draws on findings of anthropology, ecology, genetics, ethology, and evolutionary psychology to explain the adaptive, or survival, value of behavior for an individual or species.

According to Darwin, species have developed through the related processes of *survival of the fittest* and *natural selection*. Individuals with heritable traits *fitted* (better adapted) to their environments survive and reproduce more than those that are less fitted (less well adapted). Thus, through differential reproduction success, individuals with more adaptive characteristics pass on their traits to future generations at higher levels than individuals who are less fit. In this way, adaptive characteristics (ultimately coded in their genes) are selected to be passed on, and the less adapted ones die out. Over vast spans of time, these small, incremental changes in genetic structures add up and result in the evolution of new species.

Many animals, including humans and gorillas, form strong, loving bonds with their babies. Ethologists would highlight the survival value of such attachments. JRL Photographer/iStock/Getty Images

Evolved mechanisms are behaviors that developed to solve problems in adapting to an earlier environment. For example, a sudden aversion to certain foods during pregnancy may originally have evolved to protect the vulnerable fetus from toxic substances (Profet, 1992). Such evolved mechanisms may survive even though they no longer serve a useful purpose (Bjorklund & Pellegrini, 2002), or they may evolve further in response to changing environmental conditions.

Ethology is the study of the adaptive behaviors of animal species in natural contexts. The assumption is that such behaviors evolved through natural selection. Ethologists generally compare animals of different species and seek to identify which behaviors are universal and which are specific to a particular species or modifiable by experience.

For example, one widespread characteristic throughout the animal kingdom is called *proximity-seeking*, or, more casually, "staying close to mommy." This was first studied by Konrad Lorenz in newborn ducklings, who imprint on and follow the first moving object they see. Many other animals also engage in similar behaviors. The reason for this is that those

mar88301_ch02_015-039.indd 26 8/9/20 4:00 PM

baby animals that did not stay close to their mothers tended not to survive, and therefore did not reproduce later in life.

But why discuss animal research in a human development text? The answer is that humans have also been subject to the forces of evolution and thus are likely to also have innate adaptive behaviors. In fact, one of the most important theories in developmental psychology was strongly influenced by the ethological approach. The British psychologist John Bowlby (1969) drew upon his knowledge of proximity-seeking behavior in animals of different species as he formed his ideas about attachment in humans.

A related extension of the ethological approach can be found in **evolutionary psychology.** Ethologists focus on cross-species comparisons, whereas evolutionary psychologists focus on humans and apply Darwinian principles to human behavior. Evolutionary psychologists believe that just as we have a heart specialized as a pump, lungs specialized for air exchange, and thumbs specialized for grasping, we also have aspects of our human psychology specialized for solving adaptive problems. According to this theory, people unconsciously strive to perpetuate their genetic legacy. They do so by seeking to maximize their chances of having offspring who will survive to reproduce and pass down their characteristics.

evolutionary psychology
Application of Darwinian principles of natural selection and survival of the fittest to individual behavior.

It is important to note that an evolutionary perspective does not reduce human behavior to the effects of genes seeking to reproduce themselves despite arguing that ultimately the transmission of genes is what drives many evolved behaviors. Evolutionary psychologists place great weight on the environment to which humans must adapt and the flexibility of the human mind. In this view, our evolved mechanisms are sensitive to the environmental and cultural contexts in which we develop. Moreover, our ability to engage in abstract thought and reasoning allows us to override evolutionary influences, such as might happen when we decide to forgo a tempting piece of chocolate cake despite having a gustatory system designed to appreciate sweets.

THEORIES AND THE RESEARCH PROCESS

Theories of human development grow out of, and are tested by, research. Research questions and methods reflect a researcher's particular theoretical orientation. For example, in trying to understand how a child develops a sense of right and wrong, a behaviorist might examine what kinds of behavior the parents punish or praise. A social learning theorist would focus on imitation of moral examples, possibly in stories or in movies. An information-processing researcher might try to identify the steps a child uses to determine the range of moral options available and then to decide which option to pursue. An evolutionary psychologist might be interested in the adaptive purpose of moral development and how it might affect social behavior.

With the vital connection between theory and research in mind, let's look at the methods developmental researchers use.

Research Methods

Researchers in human development work within two methodological traditions: quantitative and qualitative. Each of these traditions has different goals and different ways of seeing and interpreting reality and emphasizes different means of collecting and analyzing data.

QUANTITATIVE AND QUALITATIVE RESEARCH

Generally, when most people think of scientific research, they are thinking of what is called *quantitative research*. **Quantitative research** deals with objectively measurable, numerical data that can answer questions such as "how much?" or "how many?" and that is amenable to statistical analysis. For example, quantitative researchers might study the fear and anxiety children feel before surgery by asking them to answer questions, using a numerical scale, about how fearful or anxious they are. These data could then be compared to data for children not facing surgery to determine whether a statistically significant difference exists between the two groups.

quantitative research
Research that deals with objectively measurable data.

mar88301_ch02_015-039.indd 27 8/9/20 4:00 PM