


AUSTRALIAN & NEW ZEALAND
4TH
EDITION

LIFE SPAN HUMAN DEVELOP MENT

Carol K. **Sigelman**
Linda **De George**
Kimberley **Cunial**

Mark **Kohler**
Nadine **Ballam**
Elizabeth A. **Rider**



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Life Span Human Development: Australian and New Zealand

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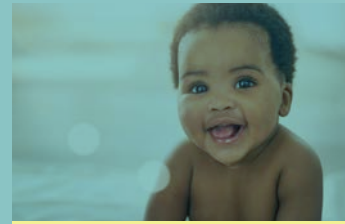
BRIEF CONTENTS

CHAPTER 1



Understanding life span
human development 1

CHAPTER 2



Theories of human
development 46

CHAPTER 3



Genes, environment and
the beginnings of life 92

CHAPTER 4



Body, brain and
health 148

CHAPTER 5



Cognitive
development 208

CHAPTER 6



Sensory-perception,
attention and memory 253

CHAPTER 7



Intelligence and
creativity 310

CHAPTER 8



Language, literacy and
learning 360

CHAPTER 9



Self, personality, gender
and sexuality 405

CHAPTER 10



Social cognition and moral
development 460

CHAPTER 11



Emotions, attachment and
social relationships 509

CHAPTER 12



Developmental
psychopathology 565

CHAPTER 13



The final challenge:
Death and dying 618

CONTENTS

Guide to the text	x
Guide to the online resources	xiv
Preface	xvi
About the authors	xx
Acknowledgements	xxii



1 UNDERSTANDING LIFE SPAN HUMAN DEVELOPMENT 1

1.1 How should we think about development?	3	1.3 How is development studied?	21
Defining development	3	The scientific method	21
Conceptualising the life span	4	Sample selection	22
Framing the influence of nature and nurture	10	Data collection techniques	22
1.2 What is the science of life span development?	15	Case study, experimental and correlational methods	25
Goals of study	15	Developmental research designs	30
Early beginnings	16	1.4 What special challenges do developmental scientists face?	37
The modern life span perspective	18	Protecting the rights of research participants	37
		Conducting culturally sensitive research	38



2 THEORIES OF HUMAN DEVELOPMENT 46

2.1 Developmental theories and the issues they raise	47	2.4 Humanistic theories	65
Nature and nurture	49	Maslow: Hierarchy of needs	66
Activity and passivity	49	Humanistic theories: Contributions and weaknesses	67
Continuity and discontinuity	49	2.5 Cognitive theories	68
Universality and context specificity	50	Piaget: Cognitive developmental theory	69
2.2 Psychoanalytic theories	52	Vygotsky: Sociocultural theory	70
Freud: Psychoanalytic theory	53	Information-processing approach	71
Erikson: Psychosocial theory	56	Theories of adult cognitive development	71
Psychoanalytic theories: Contributions and weaknesses	57	Cognitive theories: Contributions and weaknesses	73
2.3 Learning theories	58	2.6 Systems theories	74
Pavlov and Watson: Classical conditioning	58	Gottlieb: Epigenetic psychobiological systems perspective	74
Skinner: Operant conditioning	59	Systems theories: Contributions and weaknesses	78
Bandura: Social cognitive theory	62	2.7 Theories in perspective	80
Learning theories: Contributions and weaknesses	64		

3 GENES, ENVIRONMENT AND THE BEGINNINGS OF LIFE 92



3.1 Individual heredity	93	The foetal period	117
Conception	93	3.4 The prenatal environment and foetal health	121
The genetic code	95	Teratogens	121
Mechanisms of inheritance	100	Parental characteristics and foetal health	127
Genetic abnormalities and disorders	102	3.5 The perinatal environment	130
3.2 The interplay of genes and environment	106	Childbirth	130
Studying genetic and environmental influences	106	Identifying at-risk newborns	136
How genes and environment work together	109	3.6 The neonatal environment	137
3.3 Prenatal stages	114	Breast or bottle?	137
The germinal period	115	Peripartum depression	138
The embryonic period	115		

4 BODY, BRAIN AND HEALTH 148



4.1 Building blocks of growth and lifelong health	149	Brain growth and development	169
The endocrine system	149	Health and wellness in childhood	171
The brain and nervous system	151	4.4 The adolescent	177
Principles of growth	153	The adolescent growth spurt and puberty	177
A life span developmental model of health	154	The adolescent brain	183
4.2 The infant	156	Teen health and wellness	184
Rapid physical growth	156	4.5 The adult	187
The infant brain	157	The changing body	188
Newborn capabilities	158	The changing brain	188
Infant motor development	160	The changing reproductive system	190
Health and wellness in infancy	164	Health challenges: Ageing or disease, disuse or misuse?	193
4.3 The child	167		
Physical growth and motor capabilities	167		

5 COGNITIVE DEVELOPMENT 208



5.1 Piaget's cognitive developmental theory	209	5.2 Vygotsky's sociocultural theory	216
Processes of intellectual and cognitive development	210	Culture and thought	216
Piaget: Contributions and challenges	212	Social interaction and thought	217
A modern take on constructivism	214	Tools of thought	218
		Evaluation of Vygotsky	220

5.3 Fischer's dynamic skill framework	222	5.6 The adolescent	236
Comparison to Piaget and Vygotsky	223	Emergence of abstract and systematic thinking	236
5.4 The infant	225	Progress towards mastery of formal operations	239
Sensorimotor thinking	225	Implications of formal thought	241
The development of object permanence	225	5.7 The adult	242
The emergence of symbols	228	Limitations in adult cognitive performance	243
5.5 The child	229	Growth beyond formal thought	243
Preschoolers: Symbolic thinking	229	Ageing and cognitive change	245
School-age children: Logical thinking	234		



6 SENSORY-PERCEPTION, ATTENTION AND MEMORY 253

6.1 The information-processing approach to cognition	254	Explaining memory development	274
Sensation, perception and attention	255	Autobiographical memory	279
Memory	255	Developments in problem solving	282
Problem solving	259	6.4 The adolescent	285
6.2 The infant	260	Attention	285
Uncovering infants' mental capabilities	261	Improvements in memory and problem solving	286
Sensory-perceptual abilities	261	6.5 The adult	288
Early memory abilities	271	Sensory-perceptual changes	288
6.3 The child	272	Memory, problem solving and ageing	293
Sensory-perceptual refinements	272	Explaining autobiographical memory	298
Advances in attention	273		



7 INTELLIGENCE AND CREATIVITY 310

7.1 Defining and measuring intelligence and creativity	311	7.3 The infant	328
The psychometric view of intelligence	311	Developmental quotients	329
Gardner's theory of multiple intelligences	316	Infant intelligence as a predictor of later intelligence	329
Sternberg's triarchic theory of intelligence	318	7.4 the child	332
Measuring creativity and intelligence	321	The stability of IQ scores during childhood	332
7.2 Factors that influence intelligence and creativity	323	The emergence of creativity	333
The Flynn effect	324	7.5 The adolescent	334
Genes and intelligence	324	Intellectual change and continuity	335
Environment and intelligence	325	IQ and school achievement	335
Genes, environments and creativity	328	Fostering creativity	335
		7.6 The adult	337
		Changes in IQ with age	337
		IQ, wealth and health	341

Potential for wisdom	342	7.8 Integrating cognitive perspectives	350
Creative endeavours	344		
7.7 The extremes of intelligence	345		
Intellectual disability	345		
Giftedness	347		

8 LANGUAGE, LITERACY AND LEARNING 360

8.1 The language system	361	Learning to read	378
Describing language:		Fostering academic success	381
Basic components	361	8.4 The adolescent	389
Explaining language:		Academic achievement	389
Nature and nurture	362	Pathways to adulthood	393
8.2 The infant	367	8.5 The adult	394
Developing language	367	Language: Continuity and change	394
Mastery motivation	373	Adult literacy	394
Early learning	374	Adult education	395
8.3 The child	377	Theoretical contributions to learning and education	396
Expanding language skills	378		



9 SELF, PERSONALITY, GENDER AND SEXUALITY 405

9.1 Conceptualising the self and personality	406	9.4 The adolescent	429
Basic concepts and theories of self and personality	406	Forging a sense of self and identity	429
Sex, gender and sexuality	411	Adhering to gender roles	434
9.2 The infant	415	Adolescent sexuality	435
The emerging self	415	9.5 The adult	437
Temperament	417	Ageing and self-esteem	437
9.3 The child	420	Continuity and discontinuity in personality	439
The evolving self and personality	420	Eriksonian psychosocial personality growth	442
Acquiring gender roles	423	Changes in gender roles and sexuality	443
Childhood sexuality	427	Vocational identity and development	446



10 SOCIAL COGNITION AND MORAL DEVELOPMENT 460

10.1 Social cognition and perspective taking	461	10.2 Perspectives on moral development	468
Theory of mind	461	Moral emotion:	
Nature, nurture and theory of mind	464	Psychoanalytic theory	469
Social cognition and perspective taking in adulthood	467	Moral reasoning: Cognitive developmental theory	470



Moral behaviour:			
Social cognitive theory	475		
The functions of morality:			
Evolutionary theory	476		
Indigenous perspectives on morality	476		
10.3 The infant	478		
Empathy and prosocial behaviour	479		
Early antisocial behaviour	480		
Early moral socialisation	481		
		10.4 The child	482
		Moral understandings	483
		Moral socialisation	485
		10.5 The adolescent	487
		Changes in moral reasoning	487
		Bullying	489
		Antisocial behaviour	491
		10.6 The adult	498
		Moral reasoning and ageing	498
		Moral intuition and emotion	498
		Predicting moral action	500



11 EMOTIONS, ATTACHMENT AND SOCIAL RELATIONSHIPS 509

11.1 Emotional development	510		
First emotions and emotional regulation	510		
Emotional learning in childhood	513		
Adolescent moods	514		
Emotions and ageing	515		
11.2 Perspectives on relationships	517		
Changing social systems across the life span	517		
Attachment theory	517		
11.3 The infant	520		
An attachment forms	520		
Quality of attachment	522		
Culture and infant attachment	524		
		Implications of early attachment	527
		First peer relations	530
		11.4 The child	531
		The caregiver–child relationship	531
		Sibling relationships	535
		Peer networks	535
		11.5 The adolescent	540
		Balancing autonomy and attachment to parents	540
		Changing peer relationships	541
		11.6 The adult	544
		Social networks	545
		Family relationships	547
		Adult attachment	549



12 DEVELOPMENTAL PSYCHOPATHOLOGY 565

12.1 What makes development atypical?	566		
Diagnostic guidelines and criteria	566		
Developmental psychopathology	567		
12.2 The infant	572		
Autism spectrum disorder (ASD)	572		
Depression in infancy?	578		
12.3 The child	579		
Externalising and internalising problems	579		
Attention deficit hyperactivity disorder (ADHD)	581		
Childhood depression	586		
		12.4 The adolescent	589
		Storm and stress?	589
		Adolescent problem behaviours	589
		Eating disorders	590
		Substance use disorders	593
		Depression and suicidality	597
		12.5 The adult	601
		Stress and disorder in adulthood	601
		Depression in adulthood	602
		Ageing and dementia	603

13 THE FINAL CHALLENGE: DEATH AND DYING**618**

13.1 Matters of life and death	619	13.5 The adolescent	643
What is death?	619	Advanced understandings of death	643
What kills us and when?	623	Experiences with death and dying	643
Theories of ageing: Why do we age and die?	626	13.6 The adult	645
13.2 The experience of death	630	Death in the family context	645
Perspectives on dying	630	13.7 Coping with death	651
Perspectives on bereavement	632	Challenges to the grief work perspective	651
13.3 The infant	636	Who copes and who succumbs?	653
13.4 The child	637	Bereavement and positive growth	655
Grasping the concept of death	638	Supporting the dying and bereaved	655
Experiences with death and dying	640	Taking our leave	658
Glossary	668		
Name Index	681		
Subject Index	699		

GUIDE TO THE TEXT

As you read this text you will find a number of features in every chapter to enhance your study of **human development** and help you understand how the theory is applied in the real world.

CHAPTER-OPENING FEATURES

Gain insight into how psychology theories explored in the chapter relate to real life individuals through the **Topic Insights** at the beginning of each chapter.

The **chapter outline** signposts the main chapter heading contained in each chapter for easy reference.

CHAPTER OUTLINE		
<p>1.1 How should we think about development? Defining development Conceptualising the life span Framing the influence of nature and nurture</p> <p>1.2 What is the science of life span development? Goals of study</p>	<p>Early beginnings The modern life span perspective</p> <p>1.3 How is development studied? The scientific method Sample selection Data collection techniques Case study, experimental and correlational methods</p>	<p>Developmental research designs</p> <p>1.4 What special challenges do developmental scientists face? Protecting the rights of research participants Conducting culturally sensitive research</p>

TOPIC INSIGHT

The centenarian athlete

Ruth Frith, born in 1909, was one of the world's oldest competing field athletes, taking up the sport in her 70s and competing until she died in 2014 aged 104. The Australian great-grandmother held Masters Games medals and world records in shotput, javelin and hammer-throw. Ruth had a regular physical training regime, including bench-pressing, and was coached by

living through the women's liberation and feminism movements, Ruth thought a woman's place is in the home: 'I think that's half the problem with children; there is no one to come home to when they come home from school' (Jerga, 2009; McKimmie, 2010; SBS Insight, 2013; Stephens, 2014). Although her parents died when she was at high school, Ruth's sisters lived long lives too, reaching 80 and 97 years of age.

FEATURES WITHIN CHAPTERS

Identify the key concepts that the chapter will cover with the **Learning objectives** at the start of each key heading. Then test your knowledge and apply the theory you have learned with the **checking understanding** and **critical thinking** questions at the end of each key topic.

<p>1.1a Define development and ageing, and their relationship to each other.</p> <p>1.1b Explain and illustrate the role played by age grades, age norms and the social clock in making human development different in various historical, cultural and subcultural contexts.</p> <p>1.1c Summarise the positions one can take on the 'nature-nurture' issue and the position most developmental scientists today take.</p>	LEARNING OBJECTIVES
---	----------------------------

IN REVIEW

<p>CHECKING UNDERSTANDING</p> <ol style="list-style-type: none"> 1 What are the three broad domains or areas of development? 2 What is culture, and how does it influence development across the life span? 3 In Bronfenbrenner's bioecological model, where is 'nature' and where is 'nurture'? (Review Figure 1.5.) 	<p>CRITICAL THINKING</p> <p>Apply Bronfenbrenner's bioecological model to Ruth Frith, the centenarian athlete featured at the beginning of the chapter, and give an example of how each of Bronfenbrenner's environmental systems may have affected her development over the course of her life span.</p>
---	--

Real World Application

Real World Application boxes examine how knowledge has been applied to optimise development in a domain of developmental psychology. These facilitate student understanding of the practical and professional applications of developmental psychology theory.

Successful aging	Ch 1, p. 10
Using developmental theories to prevent risky sexual behaviour and unplanned teenage pregnancy	Ch 2, p. 83
Prevention and treatment of genetic conditions	Ch 3, p. 105
Halting the obesity 'brain drain'	Ch 4, p. 186
Improving children's cognitive functioning	Ch 5, p. 221
Aiding children with hearing impairments	Ch 6, p. 267
Nurturing development in early learning programs	Ch 7, p. 330

Real World Application

SUCCESSFUL AGEING

There is tremendous variability in the health, wellness and functioning of older adults. Some are limited by health problems, but others, like Ruth Frith, the centenarian athlete who features in the chapter opening, enjoy active, healthy lives. What factors might account for differences in the functioning of older adults, and what do we know about staying healthy and ageing successfully in older adulthood?

Longitudinal studies that have followed the same participants for a decade or more have produced some consistent findings. (To learn more about longitudinal studies, see the section later in this chapter on 'Developmental research designs'.) For example, the Melbourne Collaborative Cohort study (which commenced in 1990 with over 40,000 participants born

McPherson, 2010). What exercise cannot do, however, is halt the inevitable ageing process. For example, long-term follow-up of competitive athletes found that exercise capacity decreased for those in their 70s and 80s as a result of normal ageing processes, such as stiffening of cardiac valves (Muster et al., 2010).

There is more to successful ageing than a healthy lifestyle and physical activity. In 1986, David Snowdon (2002) began the Nun Study with 678 nuns ranging in age from 75–106 years. In this remarkable longitudinal study, participants underwent annual mental and physical testing, provided access to their lifetime health records, and agreed to donate their brains for examination following their deaths. A major finding from this investigation



Sister Esther, shown here at age 106, interacting with Nun Study researcher Dr David Snowdon.

and maintain a positive perception of ageing (Sargent-Cox, Anstey & Luszcz, 2012). Findings also point to the benefits of social networks for successful ageing, showing that strong connections with friends and family are associated with longer survival and are protective against disability and moving to residential aged care

Making inclusion work	Ch 8, p. 386
Treating disorders of sex development	Ch 9, p. 412
Stopping the bullies	Ch 10, p. 490
Preventing child abuse	Ch 11, p. 534
How do you treat a depressed 3-year-old?	Ch 12, p. 558
Supporting the bereaved family	Ch 13, p. 658

Diversity

Explore the diverse cultural issues, research and practices in relation to developmental science by reading the **Diversity** boxes.

Culturally sensitive researchers	Ch 1, p. 39
Culture and observational learning	Ch 2, p. 63
Childbirth and culture	Ch 3, p. 134
Aboriginal children's health	Ch 4, p. 171
Are Piaget's stages cross-culturally universal?	Ch 5, p. 213
Culture and autobiographical memory	Ch 6, p. 281
Explaining cultural differences in IQ test scores	Ch 7, p. 327
International differences in achievement test scores	Ch 8, p. 392

Diversity

CULTURALLY SENSITIVE RESEARCHERS



Both Bronfenbrenner's bioecological model and Baltes' life span perspective emphasise that development is shaped by its cultural context. This implies that we need to study development in a variety of contexts using culturally sensitive methods to understand both what is universal and what is culturally specific about human development (Cole & Packer, 2011).

Culturally sensitive researchers must first be prepared to consult, negotiate and research with participants and representatives (such as elders) of other cultural and subcultural groups

(Gorman & Toombs, 2009). General and specific research ethics guidelines in New Zealand and Australia (see *On the Internet: Guidelines for research with Indigenous peoples*) require consultation at all stages of research with Indigenous people, not only for protecting research participants but also to ensure Māori and Aboriginal and Torres Strait Islander people have a voice and are meaningfully engaged in research about issues for their people and communities (Health Research Council of New Zealand, 2010; National Health and Medical Research Council, 2018).

Second, it can be extremely challenging to ensure that data

and community networks, while Māori participants were recruited using the Kaupapa Māori method (Māori approaches to research), which involved engaging Māori iwi (tribes) and health providers to assist with recruitment and conduct of the research and the use of Māori language in interviews (Dyall et al., 2013; Walker, Ekstone & Gibbs, 2006). With this approach the researchers successfully recruited large, equal numbers of Māori and non-Māori participants (600 in each group).

Third, researchers who study cultural influences on development, or racial, ethnic and socioeconomic differences in development, must work hard to keep

Culture and self-conceptions	Ch 9, p. 410
Morality, culture and gender	Ch 10, p. 474
Searching for love as an LGBTIQ youth	Ch 11, p. 543
Psychological disorders and cultural considerations	Ch 12, p. 568
Grief, mourning and culture	Ch 13, p. 633

Engagement activity

LONGEVITY QUIZ

There were estimated to be 573,000 people over the age of 100 (centenarians) in 2020, and by the year 2050 experts believe there will be about 3.2 million (United Nations, 2019). Is there a 100th birthday in your future? Take the following longevity quiz and get an estimate of your personal life expectancy. Start with the average life expectancy of 83 years if you are female and 79 years if you are male. Then add and subtract years as you answer each question below to arrive at an idea of your life expectancy. If you notice you are subtracting years as a result of certain poor lifestyle choices, you can take actions to alter these choices as

5 If you are married, add 4 years. If you are over age 25 and not married, subtract 1 year for every decade not married.

6 Add 2 years if your family income places you in the middle-class or higher socioeconomic category.

7 Subtract 3 years if you have been poor for most of your life.

8 Subtract 1 year for every 4.5 kilograms you are overweight.

9 If your belly measurement is bigger than your chest measurement, subtract 2 years.

10 Add 3 years if you are over 40 and not overweight.

15 Add 2 years if you are a reasoned, practical person, but subtract 2 years if you are aggressive, intense and competitive.

16 Add 1–3 years if you are basically happy and content with life, but subtract 1–5 years if you often feel unhappy, worried or guilty. (Use your best judgement on how happy/unhappy you are to determine how many years to add or subtract.)

17 Add 1 year if you attended 4 years of education beyond high school. Add an additional

Engagement Activity

Engagement Activity boxes in each chapter provide real-life or hypothetical situations that will help students to engage personally with the material and assess their own knowledge, beliefs, traits and attitudes by completing personality scales, test items, surveys and short quizzes.

How do you relate to older adults?	Ch 1, p. 7
Where do you stand on major developmental issues?	Ch 2, p. 48
Genetic influence: what is myth, what is reality?	Ch 3, p. 95
Longevity quiz	Ch 4, p. 197
How well do you understand Piaget's stages?	Ch 5, p. 238
Improve your memory!	Ch 6, p. 287
Are you creative?	Ch 7, p. 322

What's your motivation style?	Ch 8, p. 383
A brief personality scale	Ch 9, p. 408
Sarcasm and theory of mind	Ch 10, p. 464
Identifying internal working models of attachment	Ch 11, p. 550
Could you have ADHD?	Ch 12, p. 583
Life and death: what are your views?	Ch 13, p. 622

Further Exploration

Further Exploration boxes provide in-depth investigation of local and international research on various high interest topics.

Australian and New Zealand longitudinal studies of development	Ch 1, p. 34
School refusal behaviour	Ch 2, p. 76
Parental influences on gene expression	Ch 3, p. 113
How can brain changes during adolescence explain risky behaviours?	Ch 4, p. 184
Can there really be a Santa Claus?	Ch 5, p. 248
Ageing drivers	Ch 6, p. 291
Cognitive enhancement for ageing adults	Ch 7, p. 339
The summer learning effect	Ch 8, p. 385
Self-recognition around the world	Ch 9, p. 416

Further Exploration

AUSTRALIAN AND NEW ZEALAND LONGITUDINAL STUDIES OF DEVELOPMENT

As you have learned, longitudinal research studies have clear advantages over cross-sectional designs for answering questions about how we develop and grow as we age. In Figure 1.14 we highlight some of the largest ongoing Australian and New Zealand longitudinal studies – some studies are in the early stages; others have been gathering data on participants for over 40 years!

Throughout this book we will draw on the results of these and many other Australian, New Zealand and international longitudinal studies as we seek to understand the influences on human development across the life span – for example (and this is by no means an exhaustive list of

the featured longitudinal studies or of chapters that refer to the findings of longitudinal studies): the Australian Temperament Project (ATP; Chapter 9); the Auckland Birthweight Collaborative (ABC) Study (Chapters 3, 4 and 7); the Christchurch Health and Development Study (CHDS; Chapters 7 and 8); the Gudaga Longitudinal Birth Cohort Study of Urban Australian Indigenous Infants (Chapter 7); the Australian Mater-University Study of Pregnancy (MUSP; Chapter 10); the Minnesota Twin Family Study (MTFS; Chapter 3); the New Zealand Attitudes and Values Study (NZAVS; Chapter 9); and the Seattle Longitudinal Study (this chapter and Chapters 2 and 7).

LINKAGES

Chapter 2 – Theories of human development
Chapter 3 – Genes, environment and the beginnings of life
Chapter 4 – Body, brain and health
Chapter 7 – Intelligence and creativity
Chapter 8 – Language, literacy and learning
Chapter 9 – Self, personality, gender and sexuality
Chapter 10 – Social cognition and moral development

You can search on the internet for the corresponding websites of these studies to compare the study designs and research tools used, as well as to explore the more current results being reported from each study.

Marshmallows and the life span significance of self-control	Ch 10, p. 481
Lonely hearts	Ch 11, p. 546
Peer socialisation or peer selection	Ch 12, p. 596
Communicating with patients with unresponsive wakefulness syndrome	Ch 13, p. 620

Professional Practice

Meet real professionals in the Professional practice boxes and gain insights into how theory relates to, and informs day-to-day practice for psychologists, social workers and educators.

Meet an educational and developmental psychologist	Ch 1, p. 14
Meet an occupational therapist	Ch 1, p. 17
Meet a social worker	Ch 1, p. 20
Meet a clinical psychologist	Ch 2, p. 51
Meet an educator	Ch 2, p. 79
A strengths-based approach to health	Ch 4, p. 155
Nurturing student success	Ch 5, p. 224
Selective optimisation with compensation in practice	Ch 6, p. 298
Administering intelligence tests	Ch 7, p. 316

Professional Practice

MEET A SOCIAL WORKER

What does your role as a social worker involve, and why did you decide to become one?

A social worker looks after the psychosocial needs of any clients that come through the many and varied services that employ social workers. Some social workers work in government, some social workers work in NGOs (non-government organisations); it depends very much on the charter of that organisation as to what their duties are. Social workers take a look at a person at their developmental stage across a life span and work out the psychosocial, economic and political circumstances around the client and how they can best move the client towards the goals that are mutually agreed between them and the client.

which was great. I work now with adults, adults with addiction problems, and I also have some experience in working with both children and adults with mental health problems.

The research shows that roughly 70 per cent of people with addiction problems have got some mental health disorder; there's a comorbidity. One of the challenges is, in the remote areas where people are strepped for resources, to attempt to get them to incorporate the two – the mental health and the addiction problem – in the same management treatment. And that's rewarding when you achieve it. Pretty much all of my work has been in regional and rural communities but probably remote areas entails maybe 50 per cent of my work, up in the Gulf of Carpentaria, in northwest



Bill McGarry, Social Worker, Tasmania, Australia

that come up in remote communities ... trying to achieve some equity, not equality, but equity – there is a difference. I guess I'm also talking about engagement with professionals and bureaucrats ... talking with co-workers, especially medical staff in those locations, and encouraging them about

Cooperative learning	Ch 8, p. 388
Identity and wellbeing	Ch 9, p. 435
Responding to bullying	Ch 10, p. 490
Responding to family violence	Ch 11, p. 535
'Kick'-ing the rumination habit	Ch 12, p. 598
Being a person and a professional	Ch 13, p. 657

Explore how psychology is applied in the world around you with the Snapshot boxes.

Source: Alamy Stock Photo/
Marmaduke St. John



SNAPSHOT

At the start of the conservation-of-liquid task, children confirm that the two glasses contain equal amounts of liquid.

As the child watches, liquid from one of the original containers is poured into a new container that is a different size.

Now for the test: Does the new glass contain more liquid, or the same amount of liquid as the glass next to it?

ICONS

As you read, keep an eye out for these icons.



Linkages icons in the margin direct students to make connections between important topics covered elsewhere in the text.



NEW Indigenous content icon directs students and instructors to content related to indigenous beliefs and cultural perspectives.



Take your learning further by considering the **On the Internet** activities throughout the chapters.

END-OF-CHAPTER FEATURES

At the end of each chapter you will find several tools to help you to review, practise and extend your knowledge of the key learning objectives.

- Review your understanding of the key chapter topics with the **Summary**.
- Test your knowledge and consolidate your learning through the **Review questions** and **Apply your learning questions**.

SUMMARY

11 How should we think about development?

1.1a Development is systematic changes and continuities over the life span in the areas of physical, cognitive and psychosocial functioning, involving gains, losses and neutral changes in physical, cognitive and psychosocial functioning; it is more than just growth in childhood and biological ageing in adulthood.

1.1b Development takes place in a historical, cultural and subcultural context and is influenced by age grades, age norms and social clocks.

1.1c Understanding nature and nurture influences on development means understanding the interaction of heredity, biology and maturation with environment, experiences and learning. The complexities of transactions between people and their environment are captured in Bronfenbrenner's bioecological model, in which the individual, with his or her biological and psychological characteristics, interacts with environmental systems called the microsystem, mesosystem, exosystem and macrosystem over time (the chronosystem).

1.2 What is the science of life span development?

1.2a The study of life span development, guided by the goals of description, prediction, explanation and optimisation, began with the baby biographies

END-OF-CHAPTER ACTIVITIES

REVIEW QUESTIONS

Answer these questions to self-test your knowledge of each chapter learning outcome.

- Systematic changes and continuities in a person occurring from conception to death are collectively referred to as:
 - ageing
 - development
 - learning
 - learning
- The (a) _____ (select from cohort effect or social clock) refers to an individual's sense that certain life events should occur at a particular time, according to a schedule dictated by (b) _____. (Select from age grades, age norms, age effects or rites of passage.)
- Match the terms from Bronfenbrenner's bioecological theory with the appropriate definition of these environmental systems.

<ol style="list-style-type: none"> microsystem 	<ol style="list-style-type: none"> The interrelationships between immediate environments
---	---

1.2b APPLY YOUR LEARNING

Discuss and debate your point of view on the following developmental issues, dilemmas and controversies related to topics in this chapter.

- In this chapter we presented one view of the periods of the life span (see Figure 1.2). Do you agree with this view? What life periods would you break the life span into? What characteristics would you use to describe the life periods in your model? What are the best and worst stages of the life span from your perspective, and why?
- Many observers believe that age norms for transitions in adult development, such as marriage, parenthood, peak career achievement and retirement, are weakening in our society. Do you think such age norms could ever disappear entirely? Why or why not?

GUIDE TO THE ONLINE RESOURCES

FOR THE INSTRUCTOR

Cengage is pleased to provide you with a selection of resources that will help you to prepare your lectures and assessments when you choose this textbook for your course. Log in or request an account to access instructor resources at au.cengage.com/instructor/account for Australia or nz.cengage.com/instructor/account for New Zealand.

MINDTAP

Premium online teaching and learning tools are available on the *MindTap* platform – the personalised eLearning solution.

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MindTap for Sigelman's *Life Span Human Development* 4th edition is full of innovative resources to support critical thinking, and help your students move from memorisation to mastery! Includes:

- Sigelman's *Life Span Human Development* 4th edition eBook
- Concept check questions
- Investigate Development cases
- Mastery training and more.

MindTap is a premium purchasable eLearning tool. Contact your Cengage learning consultant to find out how *MindTap* can transform your course.



INSTRUCTOR'S MANUAL

The **Instructor's manual** includes:

- chapter outlines
- learning objectives
- review questions with suggested answers
- suggested class discussions and projects
- suggested audio-visual material to aid learning, and
- websites and readings.



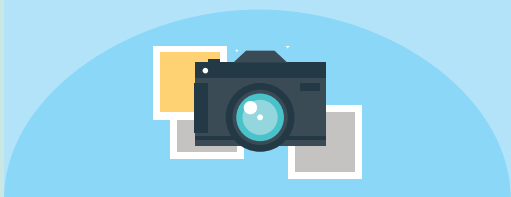
COGNERO TEST BANK

This bank of questions has been developed in conjunction with the text for creating quizzes, tests and exams for your students. Create multiple test versions in an instant and deliver tests from your LMS, your classroom, or wherever you want using **Cognero**. Cognero test generator is a flexible online system that allows you to import, edit, and manipulate content from the text's test bank or elsewhere, including your own favourite test questions.



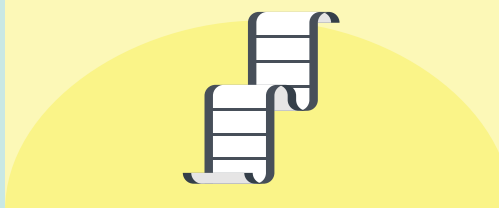
ARTWORK FROM THE TEXT

Add the digital files of graphs, pictures and flowcharts into your course management system, use them in student handouts, or copy them into your lecture presentations.



POWERPOINT™ PRESENTATIONS

Use the chapter-by-chapter **PowerPoint** slides to enhance your lecture presentations and handouts by reinforcing the key principles of your subject.



FOR THE STUDENT

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PREFACE

This book is about the development of human beings – from their days as fertilised eggs to their dying days. It highlights regularities as well as differences in development, and it asks fundamental questions about why we humans develop as we do.

This fourth Australian and New Zealand edition of *Life Span Human Development* incorporates many exciting changes to ensure the book is relevant to students studying in the Australian and New Zealand context, yet it retains four core features of the original text that have been valued by students and instructors over the years: (1) the unique integrated topical–chronological approach; (2) a presentation that is both research-based and applied; (3) an emphasis on the different theoretical perspectives that guide thinking about human development and research; and (4) an in-depth exploration throughout of nature and nurture contributions to development as well as the universality and diversity surrounding human development.

TOPICAL AND CHRONOLOGICAL APPROACH

The most distinctive feature of this book is its unique integrated topical–chronological approach. Most other life span development textbooks adopt a chronological or ‘age–stage’ approach, carving the life span into age ranges and describing the prominent characteristics of individuals within each age range. In contrast, we adopt a topical approach for the overall organisation of the book and after three introductory chapters we blend a topical approach with a chronological approach within chapters. Each blended chapter focuses on a domain of development, such as physical growth, cognition or psychosocial development, and then incorporates major sections on infancy, childhood, adolescence and adulthood to trace the developmental trends and influences throughout the life span.

Why topical?

Chronologically organised texts often have to repeat themselves as they remind readers of where development left off in an earlier age period that was covered in a previous chapter. A topic-by-topic organisation conveys the flow of development in each area – the systematic, and often dramatic, transformations that take place as well as the developmental continuities. The topical approach also helps us emphasise the processes behind development. A predominantly topical approach is, we believe, more compatible with a life span perspective. In chronologically organised textbooks, many topics are described only in connection with the age group to which they seem most relevant – for example, attachment in relation to infancy, or sexuality in relation to adolescence and adulthood. A topical organisation stimulates us to ask intriguing questions we might otherwise not ask, such as these questions about attachment relationships as explored in Chapter 11 Emotions, attachment and social relationships:

- What do infants’ attachments to their parents have in common with, and how do they differ from, attachments between childhood friends or between adult romantic partners?
- Do securely attached infants later have a greater capacity to form and sustain friendships or romantic partnerships than infants whose early social experiences are less favourable?
- What are the consequences at different points in the life span of lacking a close relationship?

Attachments are important throughout the life span, and a topical organisation helps make that clear.

Why chronological?

We also appreciate the strengths of the chronological approach, particularly its ability to portray the whole person in each period of the life span. For this reason, we integrated the age–stage approach with the topical organisation, aiming to have the best of both worlds.

Each topical chapter contains major sections on infancy, childhood, adolescence and adulthood. The existence of these sections is proof that the chapters consider development in each of the domains covered across the whole life span. These age–stage sections call attention to the distinctive qualities of each phase of life and make it easier for students to find material on an age period of particular interest to them. In short, we believe that our integrated topical–chronological approach allows us to convey the flow of life span development in particular areas and the factors influencing it while highlighting the major physical, cognitive and psychosocial developments within each particular developmental period.

Adaptability of the integrated topical–chronological approach

The first three to four chapters provide the foundations for the study of life span development. They introduce key concepts and theories of life span developmental science and provide students with a thorough grounding in nature and nurture as well as the universality and diversity surrounding human development. Even though links among chapters have been clearly identified throughout the book, instructors who are teaching short courses or who are otherwise pressed for time can omit later chapters without fear of rendering other chapters incomprehensible. For example:

- A cognitively oriented course might omit one or more of the psychosocially oriented chapters (i.e. omit any of Chapters 9 to 13).
- A psychosocially oriented course might omit one or more of the cognitively oriented chapters (i.e. omit any of Chapters 5 to 8).
- Moreover, the topical–chronological approach of the text gives instructors the flexibility to cover infancy, childhood and adolescence in a course, if they prefer, and to save the material in each chapter on adulthood for another course.

RESEARCH-ORIENTED AND RELEVANT COVERAGE

We have worked hard to create a text that is rigorous yet readable – research-oriented yet ‘real’ to students. *Life Span Human Development* tackles complex theoretical concepts and controversies and presents the best of both classic and contemporary research from multiple disciplines in a way that is accessible and relevant to students’ life experiences and career development.

We believe that it is critical for students to understand how we know what we know about development – to appreciate the research process. With that in mind, we describe illustrative studies and present their data in graphs and tables, and we cite the authors and dates of publication for a large number of books and articles, all fully referenced in the reference section at the end of each chapter. Some students may wonder why they are there. It is because we are committed to the value of systematic research, because we are bound to give credit where credit is due, and because we want students and their instructors to have the resources they need to pursue their interests in human development during and after the course.

We also appreciate that solid scholarship is of little good to students unless they want to read it, can understand it and see its relevance. We maintain that even the most complex issues in human development can be made understandable through clear and organised writing. To make the material more ‘real’, we clarify developmental concepts through examples and analogies, connect topics in the text to real world issues, and highlight the practical implications of research findings. We also incorporate applied material relevant to students’ current and future roles as parents, teachers, psychologists, educators, social workers, occupational therapists and other allied health and human service professionals. And we help students see that major theories of human development do not just guide researchers but can help anyone analyse issues that we all face, including such practical matters as raising and educating children, working with troubled adolescents or coping with Alzheimer’s disease or death in the family.

THEORETICAL GROUNDING

Theories are critical in any science, telling scientists what to study, how to study it and how to interpret their findings. We want students to leave the study of life span human development with more than facts alone; we want them to appreciate the major issues of interest to developmental scientists and how the leading theories in the field have shaped our thinking about development. Most important, we want students to learn to use these theoretical perspectives to guide their thinking and action when they encounter a question about human development outside the course.

With this in mind, we have devoted Chapter 2 to laying out in broad strokes the psychoanalytic, learning, humanistic, cognitive and systems perspectives on human development, showing what they say, where they stand on key developmental issues and how they would explain developmental phenomena such as school refusal and teenage pregnancy. We delve deeper into these and other perspectives and show how they have been applied to the study of specific aspects of development in later chapters; see, for example, a treatment of the dynamic systems view of motor development in Chapter 4; a comparison of Jean Piaget’s cognitive developmental and Lev Vygotsky’s sociocultural perspectives in Chapter 5; an application of the information-processing perspective in Chapter 6; alternative views of intelligence in Chapter 7; nativist, learning and interactionist theories of language development in Chapter 8; alternative theories of personality and gender role development in Chapter 9; theories of moral development in Chapter 10; attachment theory in Chapter 11; models and theories relating to atypical development in Chapter 12; and perspectives on dying and bereavement in Chapter 13.

NATURE–NURTURE AND UNIVERSALITY– CONTEXT SPECIFICITY THEMES

Finally, we want students to gain a deeper understanding of the influence of nature and nurture and of the many interacting forces affecting the developing person that contribute to both similarities (universalities) and differences (context specificity) in human development. We want students to appreciate that human development is an incredibly complex process that grows out of transactions between a changing person and a changing world and out of dynamic relationships among biological, psychological and social influences. No contributor to development – a gene, a temperament, a parent, a culture – acts alone and is unaffected by other influences on development.

We introduce nature and nurture and (by implication) the universality and context specificity of development in Chapter 1, and we give these concepts extended treatment in Chapter 2, where

we explore the developmental issues that underpin theories; and also in Chapter 3, where we focus on genes and environment. Each subsequent chapter includes many examples of the intertwined contributions of nature and nurture to development and the ways in which human development is both similar from person to person and culture to culture, but also diverse from person to person and culture to culture. Along the way, we describe some exciting studies that compare individuals with and without particular genes and with and without particular life experiences to bring home what it means to say that genes and environment interact to influence development – as when genes predisposing an individual to depression combine with stressful life events to produce depression.

We also illustrate the many ways in which genes and environment are intertwined and affect one another – for instance, ways in which genetic makeup influences the experiences an individual has, and ways in which experience influences which of an individual's genes are activated or expressed. In this book we provide coverage not only of genes, hormones, brain functions and other biological forces in development, but also of ways in which ethnicity, social class, community and the larger cultural context modify development. Most importantly, we illuminate the complex interrelationships between biological and environmental influences that are at the heart of the developmental process.

ABOUT THE AUTHORS

Carol K. Sigelman is Professor of Psychology and, until recently, Associate Vice President for Research and Graduate Studies and then Graduate Studies and Academic Affairs at The George Washington University. She earned her bachelor's degree from Carleton College and a double-major doctorate in English and Psychology from George Peabody College for Teachers. She has also been on the faculty at Texas Tech University, Eastern Kentucky University (where she won her college's Outstanding Teacher Award) and the University of Arizona. She has taught courses in child, adolescent, adult and life span development and has published research on such topics as the communication skills of individuals with developmental disabilities, the development of stigmatising reactions to children and adolescents who are different, and children's emerging understandings of diseases and psychological disorders. Through a grant from the National Institute of Child Health and Human Development, she and her colleagues studied children's intuitive theories of AIDS and developed and evaluated a curriculum to correct their misconceptions and convey the facts of HIV infection. With a similar grant from the National Institute on Drug Abuse, she explored children's and adolescents' understandings of the effects of alcohol and drugs on body, brain and behaviour.

Linda De George has an undergraduate degree in psychology, Master of Educational Psychology from the University of Queensland, and a PhD from Griffith University. She has worked as a psychology practitioner in diverse Australian contexts and has considerable experience as a university academic, teaching courses in life span development, educational psychology, developmental disabilities, special education and psychological assessment. Linda's research interests are broadly themed around capacity building of individuals, groups and communities.

Kimberley Cunial is a practising educational and developmental psychologist, as well as a clinical psychologist, who is also a registered teacher. She has experience working as a psychologist in school, university, community, hospital and private practice settings. Kimberley is also an approved supervisor with the Australian Board of Psychology, providing supervision to provisionally registered psychologists as well as registrars working towards specialist endorsement with the Australian Health Practitioner Regulation Agency. She earned her Bachelor and Honours degrees in psychology, and a Master of Educational Psychology, from the University of Queensland; a Postgraduate Diploma of Education from the Queensland University of Technology; as well as a PhD in Clinical Psychology from Griffith University. Kimberley has particular research interests, and has published in the area of attention deficit hyperactivity disorder (ADHD). For leisure, Kimberley enjoys spending time with her children, family, friends and pets; as well as getting away to nature and especially the beach.

Mark Kohler is a senior lecturer in psychology at the University of Adelaide, where his research broadly focuses on cognitive and behavioural development and psychophysiology. As an undergraduate he majored in biology and psychology at Flinders University, South Australia, before completing an Honours and PhD in psychology at the University of South Australia. Following this, he completed a post-doctoral research position in paediatrics at the University of Adelaide investigating the neurocognitive impact of sleep disorders in children, before returning to the University of South Australia as a lecturer in psychology and then Senior Lecturer and inaugural Program Director for Cognitive Neuroscience. He has specific expertise in the areas of child sleep and cognition, sleep disorders and memory, as well as a more recent interest in the benefits of engagement with nature for child learning, health and wellbeing.

Nadine Ballam is a senior lecturer, academic coordinator and human development subject leader in the School of Education at the University of Waikato in New Zealand. Her PhD research explored the lived experiences of gifted and talented young people from low socioeconomic backgrounds, and this remains a key research area. Alongside this, Nadine's other research interests include development across the life span, risk and resilience, identity and wellbeing. She teaches both undergraduate and postgraduate students in the areas of life span development, adult development and ageing, and motivation and talent development in young people.

Elizabeth A. Rider is Professor of Psychology and Associate Academic Dean at Elizabethtown College in Pennsylvania. She has also been on the faculty at the University of North Carolina at Asheville. She earned her undergraduate degree from Gettysburg College and her doctorate from Vanderbilt University. She has taught courses on child and life span development, women's and gender issues, applied developmental psychology and genetic and environmental influences on development. She has published research on children's and adults' spatial perception, orientation and ability to find their way. Through a grant from the Pennsylvania State System for Higher Education, she studied factors associated with academic success. The second edition of her text on the psychology of women, *Our Voices*, was published by John Wiley & Sons in 2005.

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Summary of physical, cognitive, psychological and social development across the life span

Period	Physical development	Cognitive development	Psychological development	Social development
Infant (birth to 2 years)	Brain rapidly grows and is pruned; physical growth is rapid. Reflexes are followed by more voluntary motor control; walking occurs at around 12 months. Functioning senses are available at birth; there is an early ability to understand sensory information.	Sensorimotor period: through senses and actions, infants acquire symbolic capacity and object permanence. Cooing and babbling are followed by one-word and two-word sentences. Learning capacity and recognition memory are present from birth; recall improves with age.	Acquisition of a sense of self, self-recognition and early signs of theory of mind, such as joint attention. Development of awareness of gender identity. Temperament becomes a basis for later personality. Experience of Erikson's conflict of trust versus mistrust.	Social interactions begin at birth, with attachment to a caregiver from 7 months. Gradual increases in social skills with parents and peers and the capacity for simple pretend play. Family-centred lifestyle.
Early childhood (2 to 5 or 6 years)	Rapid brain development continues. Coordination and fine motor skills improve. Perceptual abilities are good; attention span is short.	Preoperational stage: thought is guided by perceptions rather than logic. Symbolic capacity (language acquisition and pretend play) blossoms. There are some limits in information-processing capacity, use of memory strategies and reasoning.	Concrete, physical self-concept. A gender role is rapidly acquired. Mastery of the theory-of-mind concept that people can have false beliefs; an early conscience at 2 years but largely a self-serving morality. Experience of Eriksonian conflicts of autonomy vs shame and initiative vs guilt.	The caregiver-child relationship is still central in the social world. Increased social cognitive abilities allow more cooperation with peers; social pretend play blossoms. First exposure to schooling. Parents are key socialisation agents.
Middle childhood (6 to about 12 years)	Physical growth is slow and steady; motor skills gradually improve. Increased ability to control attention and use the senses intelligently.	Concrete-operations stage: logical actions occur in the head; mastery of conservation and fine points of language. Memory strategies and problem solving with concrete objects improve. IQ begins to stabilise.	Self-concept includes psychological traits. Personality stabilises. Strong gender-role typing occurs. Mostly preconventional morality centred on consequences for themselves. Much social comparison occurs during the experience of the Eriksonian conflict of industry versus inferiority.	Involvement with same-sex peers increases; close friendships form. Role-taking skills advance. Play centres on organised games with rules. School and media are influential socialisation agents.
Adolescence (12 to 18 or 20 years)	Physical and brain growth spurt; sexual maturity. Physical functioning improves. Development of body image concerns for some.	Formal-operations stage: hypothetical and abstract thought emerge; scientific problem solving begins. Attention and information-processing skills continue to improve, linked to the brain growth spurt.	More abstract and integrated self-concept. Adjustment to sexuality and perceived gender roles. Conventional moral reasoning reflects internalisation of society's rules. Experience of the Eriksonian conflict of identity vs role confusion.	Peak peer involvement and conformity. More emotionally intimate friendships are followed by dating relationships. The caregiver-child relationship becomes more equal; autonomy increases.
Early adulthood (20 to 40 years) Some distinguish an <i>emerging adulthood period</i> from 18 to 25 years.	This is the time of peak functioning, but a gradual decline in physical and perceptual capacities begins.	Intellectual functioning is mostly stable, and peak expertise and creative achievement often occur. Fluid intelligence may begin to decline, but crystallised knowledge is maintained well.	Identity continues to be defined. Some shift from conventional to postconventional moral reasoning. Confidence increases. Some experience a divergence of gender roles with new parenthood. Personality is fairly stable. Experience of the Eriksonian conflict of intimacy vs isolation. <i>Emerging adults:</i> relative freedom from obligations to others, focus on self and own psychological needs.	Social networks continue to expand; romantic relationships form. Establishment of families and roles as spouses and parents for some. Careers are launched; job switching is common. This is a period of much life change; risk of psychological problems is high. <i>Emerging adults:</i> Sometimes unstable lives filled with job changes, new relationships, and moves. Focus on education, travelling or saving money for the future.
Middle adulthood (40 to 65 years)	Physical declines become noticeable (e.g. some loss of endurance, need for reading glasses). Chronic illness increases. Menopause and male andropause occur.	Sophisticated cognitive skills develop, especially in areas of expertise. There is the possibility of growth beyond formal thought and gains in knowledge.	Personality continues to be stable; career and caregiving roles tend to take priority. There may be an Eriksonian conflict of generativity vs stagnation.	Children leave home and the grandparent role is often added to existing roles. High responsibility is taken for younger and older generations. Career is more stable, and peak success is attained. Family and work roles dominate.
Late adulthood (65 years and older)	Physical decline continues; chronic disease, disability and sensory impairment are common; and reaction time slows. But there is also continued plasticity and reorganisation of the brain in response to intellectual stimulation.	Declines in cognition are common but not inevitable. Slower learning, memory problems, and declines in IQ and problem solving occur, especially if skills are rarely exercised, but crystallised intelligence is maintained longer than fluid.	Maintenance of characteristic personality traits, self-esteem and life satisfaction for most. Possibility of growth through resolution of the Eriksonian conflict of integrity vs despair.	Close ties to family and friends continue; loneliness is rare. Generally, there is a smooth adjustment to retirement and continuity of social activities. For women especially, loss of spouse is normative and requires adjustment.

UNDERSTANDING LIFE SPAN HUMAN DEVELOPMENT

CHAPTER OUTLINE

- | | | |
|--|--|---|
| <p>1.1 How should we think about development?
 Defining development
 Conceptualising the life span
 Framing the influence of nature and nurture</p> | <p>1.3 How is development studied?
 The scientific method
 Sample selection
 Data collection techniques
 Case study, experimental and correlational methods
 Developmental research designs</p> | <p>1.4 What special challenges do developmental scientists face?
 Protecting the rights of research participants
 Conducting culturally sensitive research</p> |
| <p>1.2 What is the science of life span development?
 Goals of study
 Early beginnings
 The modern life span perspective</p> | | |

TOPIC INSIGHT

The centenarian athlete

Ruth Frith, born in 1909, was one of the world's oldest competing field athletes, taking up the sport in her 70s and competing until she died in 2014 aged 104. The Australian great-grandmother held Masters Games medals and world records in shotput, javelin and hammer-throw. Ruth had a regular physical training regime, including bench-pressing, and was coached by her daughter, Helen Searle – herself a dual Olympic and Commonwealth Games athlete in the 1960s who also continues to compete as a veteran athlete. Ruth had pacemaker surgery at age 103 for heart problems, which temporarily interrupted her athletics training. In her later years, she was not able to cook as much as she would have liked because of eyesight problems related to macular degeneration. But overall, Ruth maintained a healthy lifestyle, did not drink or smoke and generally enjoyed good health – even though she didn't eat vegetables as an adult, as she didn't like them! Ruth trained to be a solicitor but gave this away when she married in 1933: despite

living through the women's liberation and feminism movements, Ruth thought a woman's place is in the home: 'I think that's half the problem with children; there is no one to come home to when they come home from school' (Jerga, 2009; McKimmie, 2010; SBS Insight, 2013; Stephens, 2014). Although her parents died when she was at high school, Ruth's sisters lived long lives too, reaching 80 and 97 years of age.



Ruth Frith, centenarian athlete

centenarian

An individual who lives to be 100 years of age or older.

This book is about the development of humans like Ruth Frith – and you – from conception to death. Like any life, the life of Ruth Frith, a **centenarian** (an individual who lives to 100 years or older; see **On the internet: The 100+ club**), raises many questions about changes that occur over our life span, and what factors are important for a healthy, long and fulfilled life.

ON THE INTERNET**The 100+ club**

You can search for the 100+ club website to find out more about membership of one of the most exclusive clubs in the world – where you don't have to be rich and famous, just extremely old! At this website, you can view a clip in the media section from the 100+ club documentary, which features Ruth Frith from our chapter opening 'Topic insight', and you will also find links to more information about the club and centenarians.

We address questions like these and more in this book. Among other things, we'll ask how infants perceive the world; how preschool children think; how life events such as the loss of a parent affect a child's adjustment and later romantic relationships; why some young people engage in riskier pursuits than others; whether most adults eventually experience declines in their capacities; and how people typically change physically, mentally and emotionally as they age. We will also take on even more fundamental questions: How does a single fertilised egg cell turn into a unique human being like Ruth Frith? And how can we use knowledge of the genetic and environmental forces that shape development to optimise it?

Do any of these questions intrigue you? Probably so, because we are all developing people interested in ourselves and other developing people around us. Many of us want to understand how we and those we know have been affected by our experiences, how we have changed over the years and where we may be headed. Throughout this book there will be opportunities for you to reflect on your own developmental experiences and views about development. For example, in the chapter **Engagement activity** boxes there are questionnaires and quizzes to complete, and in the **Apply your learning** activities at the end of chapter you can explore your beliefs and attitudes about topical issues and debates in human development.

Many who read this book have practical motivations for learning about human development – for example, a desire to be a good parent or to pursue a career as a psychologist, educator, nurse, occupational therapist, counsellor, speech and language pathologist, social worker or other human services or allied health professional. We will introduce you to five Australian and New Zealand professionals who are practitioners, researchers and educators in some of these fields. In **Professional practice** boxes throughout the book, they will share their professional experiences with you, including how they use developmental theories, concepts and research to inform their work of optimising human development. Look out also for a range of other boxed features and activities throughout the text: **Further exploration** and **Real world application** box activities are designed to enhance your study of human development by helping you engage with the research and theory behind developmental sciences and the real-world applications (refer to the *Resources guide* at the front of this book for a description of these and more features).

This introductory chapter lays the groundwork for the remainder of the book by addressing some basic questions: How should we think about development and the influences on it? What is the science of life span development? How is development studied? And what are some of the special challenges in studying human development?

1.1 | HOW SHOULD WE THINK ABOUT DEVELOPMENT?

- 1.1a Define development and ageing, and their relationship to each other.
- 1.1b Explain and illustrate the role played by age grades, age norms and the social clock in making human development different in various historical, cultural and subcultural contexts.
- 1.1c Summarise the positions one can take on the ‘nature–nurture’ issue and the position most developmental scientists today take.

LEARNING OBJECTIVES

We begin by asking what it means to say that humans ‘develop’ or ‘age’ over the life span, how we can conceptualise the life span and its cultural and historical diversity, and how nature and nurture influence developing humans in their ever-changing environments.

Defining development

Development can be defined as systematic changes and continuities in the individual that occur between conception and death, or from ‘womb to tomb’. Development entails many changes; by describing these changes as systematic, we imply that they are orderly, patterned and relatively enduring – not fleeting and unpredictable like mood swings. Development also involves continuities, ways in which we remain the same or continue to reflect our past selves.

development Orderly patterns of change, as well as continuities, that occur in an individual throughout their life span.

The systematic changes and continuities of interest to those who study human development fall into three broad domains or areas of development:

- 1 **Physical development** is concerned with physical and biological processes, such as genetic inheritance; the growth of the body and its organs; the functioning of physiological systems, including the brain; health and wellness; the physical signs of ageing and changes in motor abilities; and so on.
- 2 **Cognitive development** is concerned with thought and other mental and intellectual processes, such as perception, attention, language, learning, memory, intelligence, creativity and problem solving.
- 3 **Psychosocial development** is concerned with aspects of the self, and social and interpersonal interactions, such as motives, emotions, personality traits, morality, social skills and relationships, and roles played in the family and in the larger society.

physical development A component of development concerned with physical and biological processes.

cognitive development A component of development concerned with thought and other mental and intellectual processes.

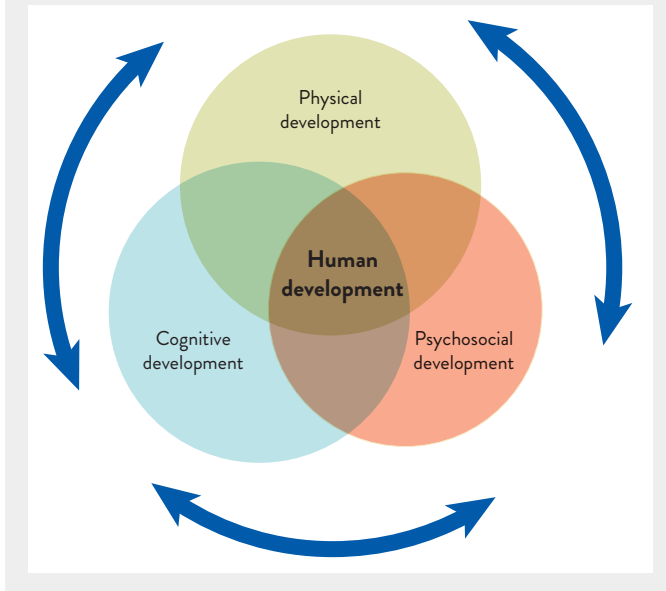
psychosocial development A component of development concerned with aspects of the self, and social and interpersonal interactions.

Developmentalists appreciate that humans are whole beings and that these developmental areas are interwoven and overlap, with changes in one area often affecting the others throughout the life span (Figure 1.1). The baby who develops the ability to crawl (physical), for example, has new opportunities to develop her mind (cognitive) by exploring kitchen cabinets, and can hone her social skills (psychosocial) by following her parents from room to room and observing and interacting with them. For Ruth Frith, introduced at the start of the chapter, daily training and exercise (physical) may have helped her retain her intellectual abilities (cognitive) and enriched her social interactions (psychosocial).

How would you portray, in a graph, typical changes from birth to old age in these three domains? Many people picture tremendous positive gains in capacity from infancy to young adulthood, little change during early adulthood and middle age, and loss of capacities in the later years. This stereotypical view of the life span is largely false, but it also has some truth in it, especially with respect to physical development. Traditionally, biologists have defined **growth** as the physical changes

growth The physical changes that occur from conception to maturity.

FIGURE 1.1 The interwoven and overlapping nature of the three main domains that influence human development



biological ageing

The biological and physical deterioration of organisms that leads inevitably to their death.

that occur from conception to maturity. We do indeed become biologically mature and physically competent during the early part of the life span. And **biological ageing** is the deterioration of all organisms, including humans, that leads inevitably to their death. Biologically, then, development *does* involve growth in early life, stability in early and middle adulthood, and declines associated with the cumulative effects of ageing in later life.

Many aspects of development do not follow this ‘gain–stability–loss’ model as we age, however. Developmental scientists have come to appreciate that developmental change at any age involves both gains and losses. For example, we should not assume that child development is all about gain; children gain many cognitive abilities as they get older, but they also become less flexible in their thinking and less open to considering unusual solutions (Gopnik, Griffiths & Lucas, 2015). They may also lose self-esteem and become more prone to depression (Hankin, 2015; Orth & Robins, 2019).

Nor should we associate ageing only with loss. Some cognitive abilities do decline over the adult years. However, adults aged 50 and older typically score higher on vocabulary tests and on tests of mental ability that draw on a person’s accumulated knowledge than young adults do (Hartshorne & Germine, 2015; Salthouse, 2012). They also sometimes show more wisdom when given social problems to ponder (Grossmann et al., 2010).

In addition, people do not always improve or worsen but instead just become different than they were (as when a child who once feared loud noises comes to fear hairy monsters under the bed instead, or an adult who was worried about career success becomes more concerned about her children’s futures). Development clearly means more than positive growth during infancy, childhood and adolescence, and decline during adulthood and old age. In short, development involves gains, losses, neutral changes and continuities in each phase of the life span, and ageing is part of it.

Conceptualising the life span

If you were to divide the human life span into periods, how would you do it? Figure 1.2 lists the periods that are typically referred to by professionals and researchers. The book’s inside back cover provides a table summarising key developments in these different periods of the life span; this is a preview of the aspects of physical, cognitive and psychosocial development we will be exploring throughout the chapters of this book. Note, however, that the given ages are approximate and age is only a rough indicator of developmental status. Improvements in standards of living and health, for example, have meant that today’s 65-year-olds are not as ‘old’ physically, cognitively or psychosocially as 65-year-olds decades ago were. There are also huge differences in functioning and personality among individuals of the same age; while some adults are bedridden at age 90, others, like Ruth Frith, are involved in athletic competition and display the physical abilities of much younger people.

The most recent addition to this list of periods of the life span – the one you may not have heard of – is **emerging adulthood**, a transitional period between adolescence and full-fledged adulthood that extends from about age 18–25 and maybe as late as 29. According to psychologist Jeffrey Arnett and others, this is a distinct phase of life in which post-school youth spend years getting educated

emerging adulthood

A period of the life span from about 18 to 25 years, when young people are neither adolescents nor adults and are exploring their identities, careers and relationships.

FIGURE 1.2 An overview of periods of the life span

Period of life	Age range
Prenatal period	Conception to birth
Infancy	First 2 years of life (the first month is referred to as the <i>neonatal</i> or <i>newborn</i> period)
Early childhood	2 to 5 or 6 years (some refer to children aged 1 to 3 who have begun to walk as <i>toddlers</i>)
Middle childhood	6 to about 12 years (or the onset of puberty)
Adolescence	Approximately 12 to 18 or 20 years (or when the individual becomes relatively independent of parents and begins to assume adult roles)
Emerging adulthood	18 to 25 or even 29 years (transitional period between adolescence and adulthood)
Early adulthood	20 to 40 years
Middle adulthood	40 to 65 years
Late adulthood	65 years and older (some refer to subcategories within this period, such as the <i>young old</i> , <i>old old</i> and <i>very old</i> , based on age ranges or differences in functioning)

and saving money in order to launch their adult lives (Arnett, 2000, 2015). Emerging adulthood is a distinct developmental period primarily in developed countries, but the phenomenon is spreading to developing ones, especially in urban areas (Arnett, 2015). According to Arnett and colleagues (Arnett & Tanner, 2006), emerging adults (maybe you?):

- explore their identities
- lead unstable lives filled with job changes, new relationships, and moves
- are self-focused, relatively free of obligations to others, and therefore free to focus on their own psychological needs
- feel in between – adult-like in some ways but not others
- believe they have limitless possibilities ahead.

Not everyone agrees that emerging adulthood is a distinct period of development (Epstein, 2013). Do you believe individuals in their late teens or early 20s are truly adults rather than ‘emerging’ adults? Why or why not? There are many ways to define adulthood, but sociologist Frank Furstenberg and his colleagues (2004) looked at five traditional, objective markers of adulthood and found that adolescents and young adults in our society are taking longer to achieve some of these, such as completing an education, being financially independent, leaving home, marrying and having children. In Australia, for example, between the 1970s and the 2010s the percentage of older adolescents and young adults that lived at home and attended higher education increased by roughly 10 per cent. Similarly, the median age for getting married and for parenthood also increased over this same time period (Australian Bureau of Statistics [ABS], 1997, 2009, 2010, 2013, 2015; Australian Institute of Health and Welfare [AIHW], 2016). In New Zealand, although the number of older adolescents and young adults living at home has remained relatively stable over the past couple of decades, trends in higher education engagement and age for marriage and parenting are similar to those reported in Australia (New Zealand Families Commission, 2008; Statistics New Zealand, 2012, 2015, 2017). Granted, many people today no longer consider marriage and parenthood to be markers of adulthood (Nelson et al., 2007), and the statistics may be misleading due to other changes in family structures. For example, in Australia, while the marriage rate has been decreasing, cohabitation (two single adults living together as an unmarried couple) had risen from 6 per cent in 1986 to 18 per cent by 2016. Further, the proportion of marriages that were preceded by cohabitation in Australia rose

from 16 per cent in 1975 to just over 80 per cent by 2017 (Australian Institute of Family Studies, 2020). Still, progress towards adulthood is changing, lending some support to the concept of a period of emerging adulthood between adolescence and adulthood. Note, too, that there are different social, cultural and historical views about the periods of the life span, as shown in Figure 1.2.

Age and development: Sociocultural perspectives

Figure 1.2 represents only one view of the periods of the life span; age, like gender, race and other significant human characteristics, means different things in different societies and cultures (Fry, 2009). **Culture** is often defined as the shared understandings and way of life of a people (see Mistry & Dutta, 2015; Packer & Cole, 2015). It includes beliefs, values and practices concerning the nature of humans in different phases of the life span, what children need to be taught to function in their society, and how people should lead their lives as adults. Different cultures can lead us along different developmental pathways, but we all participate in a culture. That culture becomes part of us, influencing how we live and how we experience our lives (Packer & Cole, 2015).

Each culture has its own ways of dividing the life span and of treating the people in different age groups. And each socially defined age group in a culture – called an **age grade** or age stratum – is assigned different statuses, roles, privileges and responsibilities. Segregating children into grades in school based on age is one form of age grading, but whole societies are layered into age grades and privilege certain ages. For example, in Australia and New Zealand, it has been determined that ‘adults’ (18-year-olds by law) can legally consume alcohol and are extended a voting privilege not granted to children. But even legal definitions of the boundaries between adolescence and adulthood vary. The legal age for marriage in Australia and New Zealand is 18 years; however, the age of consent for sexual activity ranges from 16–17 years (Lamont, 2010). Similarly, although many of us define age 65 as the boundary between middle age and old age, the ages at which people become eligible for the Age Pension and ‘senior discounts’ differ.

Age boundaries change over time as well: for example, the age of eligibility for age pension benefits for people born after 1 July 1952 in Australia is 65 years, whereas it is 67 years for those born after 1 January 1957 (Australian Government Department of Social Services, 2019). Note, however, that not all cultures and societies define age grades by years since birth. The !Kung San of Botswana often don’t know people’s chronological ages and instead define age grades in terms of functioning (Rosenberg, 2009). In relation to old age, they distinguish between the ‘old’ (*na*, meaning ‘big and great’, is an honorary title granted to all older people starting at around age 50); the ‘old/dead’ (older but still able to function); and the ‘old to the point of helplessness’, who are ailing and need care.

Once a culture has established age grades, this tends to define what people should and should not do at different points in the life span – referred to as **age norms** (Elder & Shanahan, 2006). In Western culture, for example, most people agree that 6-year-olds are too young to date or drink beer but are old enough to attend school. We also tend to agree that adults should think about marrying in their 20s or early 30s and should retire around age 65 (Parker & Vassallo, 2009; Settersten & Trauten, 2009). In developing countries, age norms often call for having children in one’s teens and stopping work earlier than 65 in response to illness and disability (Shanahan, 2000).

Why is understanding a society’s or culture’s age norms important? First, they influence the decisions people within that society or culture make about how to lead their lives and how easily they adjust to life transitions. They are the basis for what pioneering gerontologist Bernice Neugarten (1968) called the **social clock** – a concept that still seems to apply today and refers to a person’s sense of when things should be done and when he or she is ahead of or behind the schedule dictated by age norms. Prompted by the social clock, for example, an unmarried 30-year-old may feel that he should propose to his girlfriend before she gives up on him, or a childless 35-year-old might fear that

culture A system of meanings shared by a population of people and transmitted from one generation to the next.

age grade Socially defined age group or stratum, with distinct statuses, roles, privileges and responsibilities in society.

age norms Expectations about what people should be doing or how they should behave at different points in the life span.

social clock A personal sense of when things should be done in life and when the individual is ahead of or behind the schedule dictated by age norms.

she will miss her chance at parenthood unless she has a baby soon. Further, normal life events tend to affect us more negatively when they occur ‘off time’ than when they occur ‘on time’ at socially accepted ages (McLanahan & Sorensen, 1985). It can be challenging to experience puberty at either age 8 or age 18, or to become a new parent at 13 or 48. However, age norms in Western societies have been weakening for some time; it is less clear now what one should be doing at what age and so people do things like marry, have children and retire across a wider range of ages (Settersten & Trauten, 2009).

Social age norms may also be associated with age-related **stereotypes** and **ageism**. For example, misunderstandings about older adults abound – that they are sickly, frail, forgetful, cranky, unattractive, dependent or otherwise incompetent. Such stereotypes about older adults can lead to prejudicial and discriminatory attitudes and practices towards the elderly in employment and education, and prevent them from accessing opportunities and services. Yet stereotypes and ageist behaviours are not always negative. Ageism towards older adults can also be positive in nature, for example, seeking out advice from someone who is older because of a stereotypical view that all older people are wise (see **Chapter 7** for more on the topic of wisdom) (Cherry & Palmore, 2008). Either way, positive or negative ageism portrays older people in an unrealistic way – despite the stereotypes that suggest that all old people are alike, elderly adults are in fact the most diverse of all age groups in terms of physiological and psychological functioning (Andrews, Clark & Luszcz, 2002). You might like to explore your own ways of relating to older people by completing the activity in the chapter **Engagement activity** box.

Ageist attitudes and practices are, unfortunately, not limited to the elderly. Stereotypical views of children and adolescents as being ‘too young’ and unable to speak for themselves may lead to their opinions not being sought or being ignored in family and medical decision-making contexts (Scherer et al., 2013). Steps towards combating stereotypical and ageist attitudes and behaviours involve developing an accurate understanding of ageing and capabilities at various stages of the life span, while also appreciating the considerable developmental diversity within various life span periods. Age grades, age norms and social clocks differ not only from culture to culture but also from subculture to subculture. Our own society is diverse with respect to race and **ethnicity**, or affiliation with a group based on common heritage or traditions. It is also diverse with respect to **socioeconomic status (SES)**, or standing in society based on such indicators as occupational prestige, education and income. As you will learn throughout this book, Australia’s and New Zealand’s Indigenous people, and individuals of high versus low SES, sometimes have very different developmental experiences. Within these broad groups, of course, there are immense variations associated with a host of other factors. We must be careful not to overgeneralise.

stereotypes

Generalisations about the attributes of a group which are assumed to be true of all members regardless of individual variation among the group members.

ageism Prejudice or discrimination against individuals or groups on the basis of age.

LINKAGES



Chapter 7
Intelligence and
creativity

ethnicity A person’s classification in or affiliation with a group based on common heritage or traditions.

socioeconomic status (SES) The position people hold in society based on such factors as income, education, occupational status and the prestige of their neighbourhood.

Engagement Activity

HOW DO YOU RELATE TO OLDER ADULTS?

Below are 20 statements that may or may not apply to you. Write a number from 0 to 2 next to each statement that indicates how often you relate to older people, aged 60 and over, in these ways.
0 = Never
1 = Sometimes
2 = Often

How often do you:

- | | | | |
|-------|---|-------|---|
| ___ 1 | Compliment older people on how well they look, despite their age. | ___ 3 | Enjoy conversations with older people because of their age. |
| ___ 2 | Send birthday cards to older people that joke about their age. | ___ 4 | Tell older people jokes about old age. |
| | | ___ 5 | Hold doors open for older people because of their age. |





- ___ **6** Tell an older person, 'You're too old for that'.
- ___ **7** Offer to help an older person across the street because of their age.
- ___ **8** When I find out an older person's age, I may say, 'You don't look that old'.
- ___ **9** Ask an older person for advice because of their age.
- ___ **10** When an older person has an ailment, I may say, 'That's normal at your age'.
- ___ **11** When an older person can't remember something, I may say, 'That's what they call a "Senior Moment"'.
- ___ **12** Talk louder or slower to older people because of their age.
- ___ **13** Use simple words when talking to older people.
- ___ **14** Ignore older people because of their age.
- ___ **15** Vote for an older person because of their age.
- ___ **16** Vote against an older person because of their age.
- ___ **17** Avoid older people because of their age.
- ___ **18** Avoid older people because they are cranky.
- ___ **19** When a slow driver is in front of me, I may think, 'It must be an old person'.
- ___ **20** Call an older woman, 'young lady', or call an older man, 'young man'.

To score and interpret your responses:

- A** Add together the ratings for items 1, 3, 5, 7, 9 and 10, then divide that total by 12. This is the proportion of positive ageist behaviours you endorsed when compared to the highest possible total score for all the positive items.
- B** Add together the ratings for items 2, 4, 6, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19 and 20 then divide that

total by 28. This is the proportion of negative ageist behaviours you endorsed when compared to the highest possible total score for all the negative items.

- C** To help you see roughly where you stand, compare your positive and negative scores to the average age and gender scores in [Figure 1.3](#). The values in the table were found by Cherry and Palmore (2008) in a sample of 162 participants. As indicated by the results in the table, they found all age groups readily admitted to positive ageist behaviours. Any differences in the endorsement of positive or negative ageist items between age groups was not significant, meaning the younger and older adults endorsed similar numbers of items. Females endorsed positive ageist items significantly more often than males, but there were no gender differences for the endorsement of negative items.

FIGURE 1.3 Average age and gender scores

GROUP	POSITIVE ITEMS	NEGATIVE ITEMS
Younger adults (18–29 years)	0.54	0.24
Middle-aged adults (40–57 years)	0.51	0.15
Older adults (60+ years)	0.54	0.26
Males	0.49	0.23
Females	0.55	0.24
Total sample	0.53	0.23

Source: Reprinted from Cherry & Palmore (2008), with permission from Taylor & Francis Ltd.

Age and development: Sociohistorical perspectives

The meanings of childhood, adolescence and adulthood also change from historical period to historical period. In the Western context, they have changed along the following lines:

- *Childhood.* Although it is not quite this simple (Stearns, 2015), it has been claimed that in Western cultures it was not until the seventeenth century that children came to be viewed as distinctly different from adults, as innocents to be protected and nurtured. In medieval Europe (500–1500 CE), for example, 6-year-olds were dressed in miniature versions of adult clothing, treated much like adults under the law, and expected to contribute to the family's survival as soon as possible (Hanawalt, 2003). Today the goal in Western families is for children to be happy and self-fulfilled rather than economically useful (Stearns, 2015).

- *Adolescence*. Not until the late nineteenth century and early twentieth century was adolescence recognised as a distinct phase of the life span (Hine, 1999). As industrialisation advanced, an educated labour force was needed, so laws were passed restricting child labour and making schooling compulsory. By the middle of the twentieth century, adolescence had become a distinct life stage in which youths spent their days in school, separated from the adult world and living in their own peer culture (Furstenberg, 2000).
- *Emerging adulthood*. As you saw earlier, the transition period from adolescence to adulthood has become so long in modern societies that a new period of the life span, emerging adulthood, has been defined in the late twentieth and early twenty-first centuries.
- *Middle age*. This distinct life phase emerged in the twentieth century as parents began to bear fewer children and live long enough to see their children grow up and leave home (Moen & Wethington, 1999). Sometimes characterised as a time of ‘crisis’, sometimes as a time of hardly any psychological change, middle age is now understood to be a time of good health, peak cognitive functioning, stable relationships, many responsibilities and high satisfaction for most people (Whitbourne & Willis, 2006).
- *Old age*. Not until the twentieth century did our society come to define old age as a period of retirement. In earlier eras, adults who survived to old age literally worked until they dropped. Starting in the last half of the twentieth century, thanks to pensions and medical and other support programs, working adults began to retire in their 60s with many years ahead of them (Schulz & Binstock, 2006).

What lies ahead? Over the past two decades, the proportion of older adults in the populations of New Zealand and Australia has dramatically increased. For example, between 1927 and 2017 the proportion of Australians aged 65 and over increased from 5 per cent (319 000 individuals at the time) to 15 per cent of the total population (3.8 million individuals). By 2057, it is projected that 22 per cent of Australia’s population will be aged 65 and over (AIHW, 2018). As more and more people reach older ages, more chronic diseases and disabilities will be evident in the population, and an increasingly large group of elderly people will depend on an increasingly small group of younger, working adults to support them through social security, health services and other programs. This ‘ageing’ of our society, and indeed of the world’s population, will likely make the ageing experience by the end of the twenty-first century different from what it is today. While we cannot know exactly what lies ahead, the chapter **Real world application** box summarises some of what researchers have learned about how we can improve the odds of successful ageing as we move towards this future. Successful ageing is a key theme that we will address often throughout this book.

We hope the broader message is clear: *We must view life span development in its sociocultural and sociohistorical context.* We must bear in mind that each social group settles on its own definitions of the life span, the age grades within it and the age norms appropriate to each age range, and that each social group experiences development differently. We must also appreciate that age – whether it is 7, 17 or 70 – has had different meanings in different historical eras and most likely will mean something different again in the decades and centuries to come. We must also remain aware of the cultural and subcultural contexts of development and how these also influence views of age boundaries and expectations. One of the most fascinating challenges in the study of human development is to understand which aspects of development are universal and which differ across social, historical and cultural contexts – and why (Norenzayan & Heine, 2005; Shweder et al., 2006).