AUSTRALIAN & NEW ZEALAND

PSYCHOLOGY 3E

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LINKAGES

FOCUS ON RESEARCH

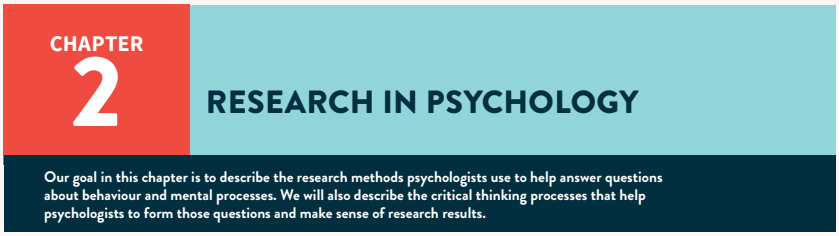
THINKING CRITICALLY

Guide to the text

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

CHAPTER-OPENING FEATURES

Gain an insight into how psychological theories relate to the real world through the **chapter opener**.


CHAPTER 2

RESEARCH IN PSYCHOLOGY

Our goal in this chapter is to describe the research methods psychologists use to help answer questions about behaviour and mental processes. We will also describe the critical thinking processes that help psychologists to form those questions and make sense of research results.

Identify the key concepts the chapter will cover with the **learning objectives** at the start of each chapter.

Examine how theoretical concepts have been used in practice through the **applying psychology questions**. **Applying psychology icons** in the chapter link these questions to in-depth discussions about research.


LEARNING OBJECTIVES

On completion of this chapter, you should be able to:

LO1 demonstrate an understanding of the scientific method and an appreciation of its role in developing psychological knowledge

LO2 demonstrate an understanding of experimental research methodology and be able to outline the basic research designs

LO3 demonstrate competence in basic statistical techniques using manual analysis methods

LO4 explain the relevance of ethical guidelines for psychologists.

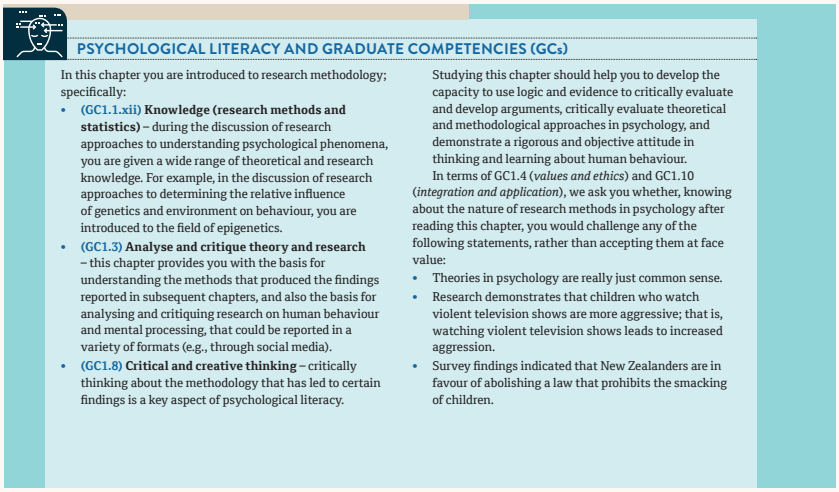
APPLYING PSYCHOLOGY

1 How do psychologists evaluate claims in the real world; for example, the impact of social media on wellbeing?

2 How can psychologists understand the experiences of individuals diagnosed with mental health issues?

3 How can psychologists protect the welfare of human and animal participants in research?

Understand the skills required while studying psychology and how to master them by reviewing the **psychological literacy and graduate competencies (GC) section**.


PSYCHOLOGICAL LITERACY AND GRADUATE COMPETENCIES (GCs)

In this chapter you are introduced to research methodology; specifically:

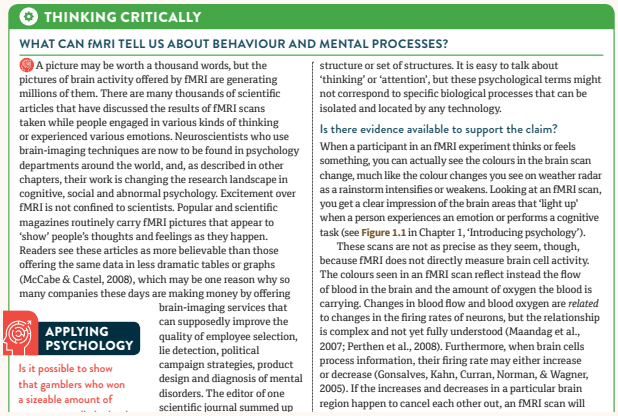
- **(GC1.1.xii) Knowledge (research methods and statistics)** – during the discussion of research approaches to understanding psychological phenomena, you are given a wide range of theoretical and research knowledge. For example, in the discussion of research approaches to determining the relative influence of genetics and environment on behaviour, you are introduced to the field of epigenetics.
- **(GC1.3) Analyse and critique theory and research** – this chapter provides you with the basis for understanding the methods that produced the findings reported in subsequent chapters, and also the basis for analysing and critiquing research on human behaviour and mental processing, that could be reported in a variety of formats (e.g., through social media).
- **(GC1.8) Critical and creative thinking** – critically thinking about the methodology that has led to certain findings is a key aspect of psychological literacy.

Studying this chapter should help you to develop the capacity to use logic and evidence to critically evaluate and develop arguments, critically evaluate theoretical and methodological approaches in psychology, and demonstrate a rigorous and objective attitude in thinking and learning about human behaviour.

In terms of GC1.4 (*values and ethics*) and GC1.10 (*integration and application*), we ask you whether, knowing about the nature of research methods in psychology after reading this chapter, you would challenge any of the following statements, rather than accepting them at face value:

- Theories in psychology are really just common sense.
- Research demonstrates that children who watch violent television shows are more aggressive; that is, watching violent television shows leads to increased aggression.
- Survey findings indicated that New Zealanders are in favour of abolishing a law that prohibits the smacking of children.

FEATURES WITHIN CHAPTERS



THINKING CRITICALLY

WHAT CAN fMRI TELL US ABOUT BEHAVIOUR AND MENTAL PROCESSES?

A picture may be worth a thousand words, but the pictures of brain activity offered by fMRI are generating millions of them. There are many thousands of scientific articles that have discussed the results of fMRI scans taken while people engaged in various kinds of thinking or experienced various emotions. Neuroscientists who use brain-imaging techniques are now to be found in psychology departments around the world, and, as described in other chapters, their work is changing the research landscape in cognitive, social and abnormal psychology. Excitement over fMRI is not confined to scientists. Popular and scientific magazines routinely carry fMRI pictures that appear to 'show' people's thoughts and feelings as they happen. Readers see these articles as more believable than those offering the same data in less dramatic tables or graphs (McCabe & Castel, 2008), which may be one reason why so many companies these days are making money by offering brain-imaging services that can supposedly improve the quality of employee selection, lie detection, political campaign strategies, product design and diagnosis of mental disorders. The editor of one scientific journal summed up

APPLYING PSYCHOLOGY

Is it possible to show that gamblers who won a sizeable amount of

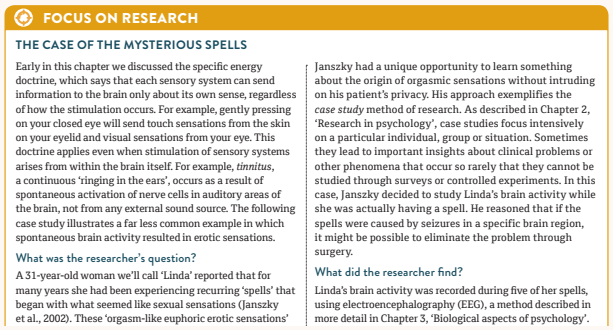
structure or set of structures. It is easy to talk about 'thinking' or 'attention', but these psychological terms might not correspond to specific biological processes that can be isolated and located by any technology.

Is there evidence available to support the claim?

When a participant in an fMRI experiment thinks or feels something, you can actually see the colours in the brain scan change, much like the colour changes you see on weather radar as a rainstorm intensifies or weakens. Looking at an fMRI scan, you get a clear impression of the brain areas that 'light up' when a person experiences an emotion or performs a cognitive task (see Figure 1.1 in Chapter 1, 'Introducing psychology').

These scans are not as precise as they seem, though, because fMRI does not directly measure brain cell activity. The colours seen in an fMRI scan reflect instead the flow of blood in the brain and the amount of oxygen the blood is carrying. Changes in blood flow and blood oxygen are *related* to changes in the firing rates of neurons, but the relationship is complex and not yet fully understood (Maandag et al., 2007; Perthen et al., 2008). Furthermore, when brain cells process information, their firing rate may either increase or decrease (Gonsalves, Kahn, Curran, Norman, & Wagner, 2005). If the increases and decreases in a particular brain region happen to cancel each other out, an fMRI scan will

Learn to analyse the evidence and draw conclusions using the five-question framework in the **thinking critically** sections. Throughout the book, psychological phenomena are described in a way that first reveals the logic of the scientific enterprise, then identifies possible flaws in its design or implementation, and finally leaves room for more questions and further research.



FOCUS ON RESEARCH

THE CASE OF THE MYSTERIOUS SPELLS

Early in this chapter we discussed the specific energy doctrine, which says that each sensory system can send information to the brain only about its own sense, regardless of how the stimulation occurs. For example, gently pressing on your closed eye will send touch sensations from the skin on your eyelid and visual sensations from your eye. This doctrine applies even when stimulation of sensory systems arises from within the brain itself. For example, *tinnitus*, a continuous 'ringing in the ears', occurs as a result of spontaneous activation of nerve cells in auditory areas of the brain, not from any external sound source. The following case study illustrates a far less common example in which spontaneous brain activity resulted in erotic sensations.

What was the researcher's question?

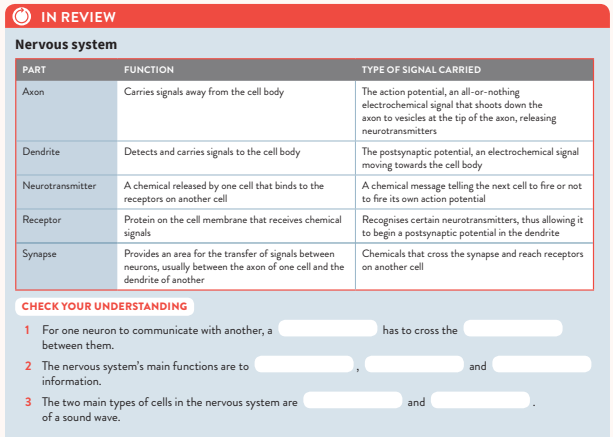
A 31-year-old woman we'll call 'Linda' reported that for many years she had been experiencing recurring 'spells' that began with what seemed like sexual sensations (Janszky et al., 2002). These 'orgasm-like euphoric erotic sensations'

Janszky had a unique opportunity to learn something about the origin of orgasmic sensations without intruding on his patient's privacy. His approach exemplifies the *case study* method of research. As described in Chapter 2, 'Research in psychology', case studies focus intensively on a particular individual, group or situation. Sometimes they lead to important insights about clinical problems or other phenomena that occur so rarely that they cannot be studied through surveys or controlled experiments. In this case, Janszky decided to study Linda's brain activity while she was actually having a spell. He reasoned that if the spells were caused by seizures in a specific brain region, it might be possible to eliminate the problem through surgery.

What did the researcher find?

Linda's brain activity was recorded during five of her spells, using electroencephalography (EEG), a method described in more detail in Chapter 3, 'Biological aspects of psychology'.

Examine the ways in which research methods have been applied to help advance understanding of behaviour and mental processes through the **focus on research** sections. Focus on research is organised around five key questions: (1) What was the researcher's question? (2) How did the researcher answer the question? (3) What did the researcher find? (4) What do the results mean? And (5) what do we still need to know?



IN REVIEW

Nervous system

PART	FUNCTION	TYPE OF SIGNAL CARRIED
Axon	Carries signals away from the cell body	The action potential, an all-or-nothing electrochemical signal that shoots down the axon to vesicles at the tip of the axon, releasing neurotransmitters
Dendrite	Detects and carries signals to the cell body	The postsynaptic potential, an electrochemical signal moving towards the cell body
Neurotransmitter	A chemical released by one cell that binds to the receptors on another cell	A chemical message telling the next cell to fire or not to fire its own action potential
Receptor	Protein on the cell membrane that receives chemical signals	Recognises certain neurotransmitters, thus allowing it to begin a postsynaptic potential in the dendrite
Synapse	Provides an area for the transfer of signals between neurons, usually between the axon of one cell and the dendrite of another	Chemicals that cross the synapse and reach receptors on another cell

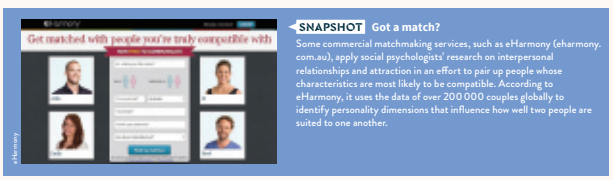
CHECK YOUR UNDERSTANDING

1 For one neuron to communicate with another, a _____ has to cross the _____ between them.

2 The nervous system's main functions are to _____, _____ and _____ information.

3 The two main types of cells in the nervous system are _____ and _____ of a sound wave.

Test your understanding as you go via the **in review** boxes, which summarise information and are accompanied by **check your understanding** self-test questions to help you review, integrate, and comprehend large chunks of information.



SNAPSHOT Got a match?

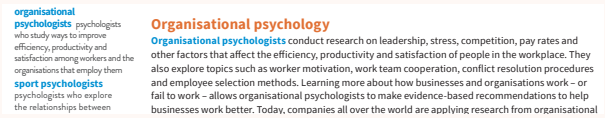
Some commercial matchmaking services, such as eHarmony (eharmony.com.au), apply social psychologists' research on interpersonal relationships and attraction in an effort to pair up people whose characteristics are most likely to be compatible. According to eHarmony, it uses the data of over 200 000 couples globally to identify personality dimensions that influence how well two people are suited to one another.

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

FEATURES WITHIN CHAPTERS

Important **key terms** are marked in bold in the text and **defined in the margin** when they are used for the first time.

Actively try out the concepts discussed in the chapter by following the **Try this** icons throughout the text.

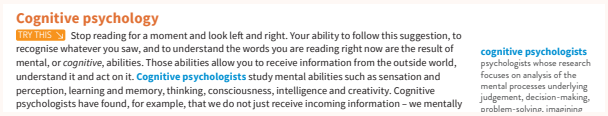


organisational psychologists psychologists who study ways to improve efficiency, productivity and satisfaction among workers and the organisations that employ them

sport psychologists psychologists who explore the relationships between

Organisational psychology

Organisational psychologists conduct research on leadership, stress, competition, pay rates and other factors that affect the efficiency, productivity and satisfaction of people in the workplace. They also explore topics such as worker motivation, work team cooperation, conflict resolution procedures and employee selection methods. Learning more about how businesses and organisations work – or fail to work – allows organisational psychologists to make evidence-based recommendations to help businesses work better. Today, companies all over the world are applying research from organisational



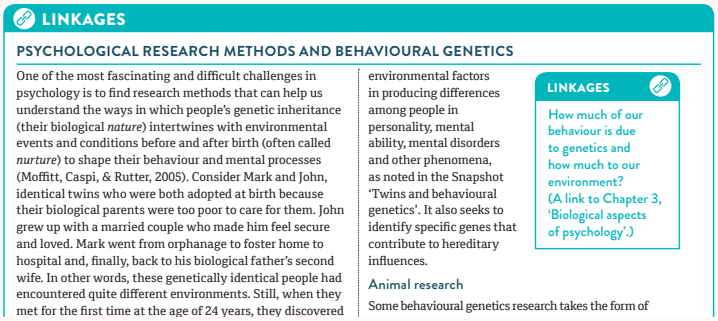
Cognitive psychology

TRY THIS Stop reading for a moment and look left and right. Your ability to follow this suggestion, to recognise whatever you saw, and to understand the words you are reading right now are the result of mental, or *cognitive*, abilities. Those abilities allow you to receive information from the outside world, understand it and act on it. **Cognitive psychologists** study mental abilities such as sensation and perception, learning and memory, thinking, consciousness, intelligence and creativity. Cognitive psychologists have found, for example, that we do not just receive incoming information – we mentally

cognitive psychologists psychologists whose research focuses on analysis of the mental processes underlying judgement, decision-making, problem-solving, imagining

PSYCHOLOGY LINKAGES

Understand the network of relationships among psychology's subfields through the psychology **linkages** features in this book.



LINKAGES

PSYCHOLOGICAL RESEARCH METHODS AND BEHAVIOURAL GENETICS

One of the most fascinating and difficult challenges in psychology is to find research methods that can help us understand the ways in which people's genetic inheritance (their biological *nature*) intertwines with environmental events and conditions before and after birth (often called *nurture*) to shape their behaviour and mental processes (Moffitt, Caspi, & Rutter, 2005). Consider Mark and John, identical twins who were both adopted at birth because their biological parents were too poor to care for them. John grew up with a married couple who made him feel secure and loved. Mark went from orphanage to foster home to hospital and, finally, back to his biological father's second wife. In other words, these genetically identical people had encountered quite different environments. Still, when they met for the first time at the age of 24 years, they discovered

environmental factors in producing differences among people in personality, mental ability, mental disorders and other phenomena, as noted in the Snapshot 'Twins and behavioural genetics'. It also seeks to identify specific genes that contribute to hereditary influences.

LINKAGES

How much of our behaviour is due to genetics and how much to our environment? (A link to Chapter 3, 'Biological aspects of psychology'.)

Animal research

Some behavioural genetics research takes the form of

- **Linkages sections** take an in-depth look at topics that feature interrelated fields of psychology.

CHAPTER REVIEW

LINKAGES

CHAPTER 2 RESEARCH IN PSYCHOLOGY

How much of our behaviour is due to genetics and how much is due to our environment?

Is it possible to do experiments on psychotherapy?

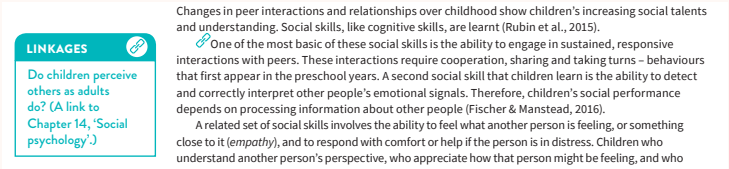
Is it ethical to deceive people in order to learn about their social behaviour?

CHAPTER 3 Biological aspects of psychology

CHAPTER 13 Psychological disorders and treatment

CHAPTER 14 Social psychology

- **Linkages diagrams** at the end of every chapter present a set of questions that illustrate three of the ways material in the chapter is related to other chapters.



LINKAGES

Do children perceive others as adults do? (A link to Chapter 14, 'Social psychology'.)

Changes in peer interactions and relationships over childhood show children's increasing social talents and understanding. Social skills, like cognitive skills, are learnt (Rubin et al., 2015).

One of the most basic of these social skills is the ability to engage in sustained, responsive interactions with peers. These interactions require cooperation, sharing and taking turns – behaviours that first appear in the preschool years. A second social skill that children learn is the ability to detect and correctly interpret other people's emotional signals. Therefore, children's social performance depends on processing information about other people (Fischer & Manstead, 2016).

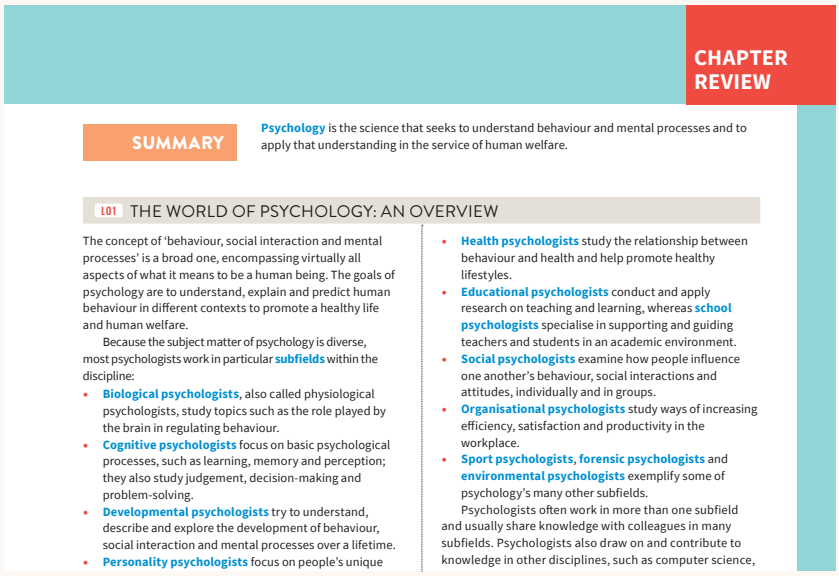
A related set of social skills involves the ability to feel what another person is feeling, or something close to it (*empathy*), and to respond with comfort or help if the person is in distress. Children who understand another person's perspective, who appreciate how that person might be feeling, and who

- **Linkages icons** throughout the book are a quick reminder to consider the bigger picture of psychology as an interrelated discipline.

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 in the **chapter review** section.

Review your understanding of the key chapter topics with the **summary**, which connects back to the chapter-opening learning objectives.



CHAPTER REVIEW

SUMMARY

Psychology is the science that seeks to understand behaviour and mental processes and to apply that understanding in the service of human welfare.

LO1 THE WORLD OF PSYCHOLOGY: AN OVERVIEW

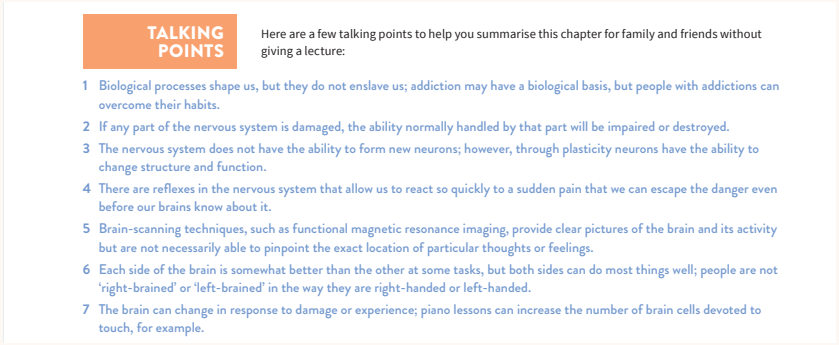
The concept of 'behaviour, social interaction and mental processes' is a broad one, encompassing virtually all aspects of what it means to be a human being. The goals of psychology are to understand, explain and predict human behaviour in different contexts to promote a healthy life and human welfare.

Because the subject matter of psychology is diverse, most psychologists work in particular **subfields** within the discipline:

- **Biological psychologists**, also called physiological psychologists, study topics such as the role played by the brain in regulating behaviour.
- **Cognitive psychologists** focus on basic psychological processes, such as learning, memory and perception; they also study judgement, decision-making and problem-solving.
- **Developmental psychologists** try to understand, describe and explore the development of behaviour, social interaction and mental processes over a lifetime.
- **Personality psychologists** focus on people's unique
- **Health psychologists** study the relationship between behaviour and health and help promote healthy lifestyles.
- **Educational psychologists** conduct and apply research on teaching and learning, whereas **school psychologists** specialise in supporting and guiding teachers and students in an academic environment.
- **Social psychologists** examine how people influence one another's behaviour, social interactions and attitudes, individually and in groups.
- **Organisational psychologists** study ways of increasing efficiency, satisfaction and productivity in the workplace.
- **Sport psychologists, forensic psychologists** and **environmental psychologists** exemplify some of psychology's many other subfields.

Psychologists often work in more than one subfield and usually share knowledge with colleagues in many subfields. Psychologists also draw on and contribute to knowledge in other disciplines, such as computer science,

Consolidate your learning by considering the chapter **talking points** section. How would you explain these points to friends and family?



TALKING POINTS

Here are a few talking points to help you summarise this chapter for family and friends without giving a lecture:

1 Biological processes shape us, but they do not enslave us; addiction may have a biological basis, but people with addictions can overcome their habits.
2 If any part of the nervous system is damaged, the ability normally handled by that part will be impaired or destroyed.
3 The nervous system does not have the ability to form new neurons; however, through plasticity neurons have the ability to change structure and function.
4 There are reflexes in the nervous system that allow us to react so quickly to a sudden pain that we can escape the danger even before our brains know about it.
5 Brain-scanning techniques, such as functional magnetic resonance imaging, provide clear pictures of the brain and its activity but are not necessarily able to pinpoint the exact location of particular thoughts or feelings.
6 Each side of the brain is somewhat better than the other at some tasks, but both sides can do most things well; people are not 'right-brained' or 'left-brained' in the way they are right-handed or left-handed.
7 The brain can change in response to damage or experience; piano lessons can increase the number of brain cells devoted to touch, for example.

Extend your understanding through the suggested **further reading** and extensive **references** list relevant to each chapter.

FURTHER READING

Now that you have finished reading this chapter, how about exploring some of the topics and information that you found most interesting. Here are some places to start:

J. Richard Block and Harold Yuker, *Can You Believe Your Eyes?* (Gardner Press, 1989) – more illusions and visual oddities.

Chandler Burr, *The Emperor of Scent* (Random House, 2003) – about the perfume industry and a scientist who is testing a new theory of smell.

Richard Cytowic, *The Man Who Tasted Shapes* (MIT Press, 2003) – about synaesthesia, a condition in which senses are mixed.

Richard L. Gregory and Andrew M. Colman (Eds.), *Sensation and Perception* (Longman, 1995) – the senses and psychophysics.

Richard L. Gregory and J. Harris (Eds.), *The Artful Eye* (Oxford University Press, 1995) – visual perception.

Oliver Sacks, *The Man Who Mistook His Wife for a Hat* (Touchstone Books, 1998) – descriptions of patients with sensory and perceptual disorders.

Oliver Sacks, *Seeing Voices: A Journey into the World of the Deaf* (Vintage, 2000) – how deaf people experience the world.

Roger Shepard, *Mind Sights* (Freeman, 1990) – visual illusions and ambiguous figures.

Adams, R. J., Courage, M. L., & Mercer, M. E. (1991). Deficiencies in human neonates' color vision: Photoreceptoral and neural explanations. *Behavioral Brain Research*, *43*, 109–114.

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Guide to the online resources

FOR THE INSTRUCTOR

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- mastery training
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PREFACE

Welcome to *Psychology,* the third Australia and New Zealand edition.

Studying psychology is both exciting and rewarding – it's the beginning of a journey which may take you down diverse pathways. In our experience, most students enter the introductory course thinking that psychology concerns itself mainly with personality, psychological testing, mental disorders, psychotherapy and other aspects of clinical psychology. They have little or no idea of how broad and multifaceted psychology can be. So many students are surprised when we ask them to read about neuroanatomy, neural communication, the endocrine system, sensory and perceptual processes and principles, prenatal risk factors and many other topics that they tend to associate with disciplines other than psychology.

Introductory texts in psychology present an opportunity to discover the reasons behind human behaviour and to address the issues which impact upon this behaviour. As you work your way through this text, you will not only gain psychological knowledge but also develop skills with which to evaluate human behaviour. We build on the Bernstein tradition; specifically, we endeavour to:

- explore the full range of psychology, from cell to society, in a manner as free as possible of theoretical bias
- balance our need to explain the content of psychology with an emphasis on the doing of psychology, through a blend of conceptual discussion and description of research studies
- foster scientific attitudes and help you to learn to think critically by examining the ways in which psychologists have solved, or failed to solve, fascinating puzzles of behaviour and mental processes
- produce a text that, without oversimplifying psychology, is clear, accessible and enjoyable to read
- demonstrate that, in spite of its breadth and diversity, psychology is an integrated discipline in which each subfield is linked to other subfields by common interests and overarching research questions – the connection between social, clinical, biological and cultural psychologists in researching health and illness is just one example of how psychologists from different subfields benefit from and build on one another's work
- provide opportunities to apply your reading and learning
- focus learning within the context of graduate competencies as accepted by the discipline in Australia and New Zealand as well as internationally
- focus on developing your psychological literacy, to enable you to better understand and evaluate presented evidence.

Preparing this edition provided us with the opportunity to adapt the information presented to ensure its relevance to our lives. The book includes regional examples to highlight many of the psychological principles explained. We worked collaboratively and sought regional representation, including consulting with Indigenous Australian and New Zealand academics, to ensure substantial coverage of the material presented.

Chapter organisation

We have designed each chapter to be a freestanding unit so that your instructors may assign chapters in any order desired. For example, many instructors prefer to teach the material on human development relatively late in the course, which is why it appears as Chapter 10. However, that chapter can be comfortably assigned earlier in the course as well.

Linkages

Many students decide to study psychology through a personal desire to help people. While this is one aspect of the profession, psychology is much broader and more multifaceted. This introductory course in psychology will raise your awareness of the many different fields of psychology and provide examples of where psychological knowledge has been of assistance to other disciplines. To help you see these relationships, we have built into the book an integrated 'Linkages' tool.

Thinking critically

We describe research on psychological phenomena in a way that reveals the logic of the scientific enterprise, identifies possible flaws in design or interpretation, and leaves room for more questions and further research. We try to display these critical thinking processes in 'Thinking critically' and 'Focus on research methods' sections, as well as throughout the main text. The ability to think critically is both a graduate attribute and a fundamental component of psychological literacy. As first-year psychology students, you will have the opportunity to substantially develop this capacity, which should serve you well throughout your lifetime in personal, professional and global contexts.

An emphasis on active learning

The many figure and photo 'Try this' symbols help you to understand and remember a psychological principle or phenomenon by suggesting ways in which you can demonstrate it for yourself. In 'Memory', for example, a 'Snapshot' caption asks you to write a step-by-step description of how to tie shoelaces to illustrate the operation of procedural memory.

'Try this' symbols also appear in page margins at the many places throughout the book where active learning is encouraged. At these points, we ask you to stop reading and actually do something to illustrate the psychological principle or phenomenon under discussion. For example, in Chapter 4 ('Sensation and perception') we ask you to focus attention on various targets as a way of appreciating the difference between overt and covert shifts in attention.

ABOUT THE AUTHORS

Douglas A. Bernstein is Professor Emeritus at the University of Illinois, Champaign-Urbana, where he served for many years as director of the introductory psychology program. He is currently affiliated as Courtesy Professor of Psychology at the University of South Florida and a Visiting Professor of Psychology at the University of Southampton in the UK. Dr Bernstein chairs the Program Committee of the National Institute on the Teaching of Psychology (NITOP) and is the Founder of the Association for Psychological Science's Preconference Institute on the Teaching of Psychology. In 2002 he received the American Psychological Foundation's award for Distinguished Teaching in Psychology.

Julie Ann Pooley is a Professor of Psychology at Edith Cowan University, in the School of Arts and Humanities. Julie Ann is a passionate educator who was awarded an Australian Award for University Teaching in 2003 and a Citation for Outstanding Contributions to Student Learning in 2011 from the Australian Learning and Teaching Council. Currently, Julie Ann is also the Associate Dean Teaching and Learning for the School of Arts and Humanities. She has published and presented her research work at the local, national and international levels. Julie Ann's research focus is on resilience and well-being of individuals and communities.

Lynne Cohen AM is an Australian Learning and Teaching Council Fellow and a Fellow of the Australian Psychological Society with an interest in developing leadership in undergraduate students. She has received numerous awards for learning and teaching. She is a retired Professor of Psychology and currently holds an honorary appointment at Edith Cowan University. Lynne is a community psychologist and brings many years of experience in resiliency research with children and university students. She has successfully developed transition programs which empower students and positively impact on their experience and outcomes. She has led a number of interdisciplinary research teams and is committed to a collaborative model involving community organisations. Lynne developed and implemented a literacy program for children with learning difficulties and has trained a team of teachers to provide a service for students with learning difficulties. She is involved with the 'We Are Here Foundation' to teach children and adults to be upstanders and not bystanders when they come across injustice. Together with colleagues, she was instrumental in establishing the Lifespan Resilience Research Group at Edith Cowan University.

Stephen Provost has been a psychology educator in a variety of institutions for more than 30 years. He has taught learning, memory, perception, psychopharmacology, statistics and a variety of topics in experimental psychology. He has a strong interest in the appropriate use of technology in teaching. He held grants from the Committee for the Advancement of University Teaching in 1993 and 1995, the first relating to the development of courseware/simulation software, and the second relating to the use of hypertext in teaching. He has been involved in a number of projects funded by the Australian Universities Teaching Committee and the Australian Learning and Teaching Council, including acting as the Project Officer for the Disciplinary Review of Psychology (Lipp, O., Terry, D., Chalmers, D., Bath, D., Hannan, G., Martin, F., ... Provost, S. [2007]. *Learning Outcomes and Curriculum Development in Psychology*. Sydney: Carrick Institute for Learning and Teaching in Higher Education. Retrieved from http://www.olt.gov.au/resource-learning-outcomes-psychology-uq-2006). He received the Australian Psychological Society Award for Distinguished Contribution to Psychological Education in 2010.

Jacquelyn Cranney (Honorary Professor, UNSW) has extensive undergraduate teaching experience, for which she has won numerous UNSW, national and international awards. She has published research on student learning and motivation, and on psychology education. She has contributed to and led national and international psychology education committees as well as communities of practice for psychology educators. She has attracted several UNSW and National education Fellowships and grants, through which she and her colleagues have driven nation-wide change in terms of undergraduate students learning to apply evidence-based psychological strategies in their diverse career destinations. Jacky is a fervent believer in George Miller's (1969) exhortation to 'give psychology away', particularly through providing opportunities to undergraduate students to develop psychological literacy (= the intentional application of psychological science to meet personal, professional and societal needs), a part of which is evidence-based self-management (= the capacity to effectively pursue valued goals, and to be flexible in the face of setbacks).

Neil Drew is Director of the Australian Indigenous Health*InfoNet* at Edith Cowan University. Neil has more than 30 years' experience working with a diverse range of Aboriginal and Torres Strait Islander communities and groups, initially in Queensland and more recently in Western Australia. Neil has a career long commitment to

community psychology research and practice. His long-term involvement to the discipline has been of enormous value in his role as program head and co-founder of the Wundargoodie Aboriginal Youth and Community Wellbeing Program, which promotes wellness and suicide prevention with young Aboriginal people in the East Kimberley region of Western Australia. In his current role Neil has a strong interest in Aboriginal and Torres Strait Islander health knowledge exchange, which is concerned with the way that knowledge is acquired, activated and used in the everyday practice of health professionals.

Contributors

The authors and Cengage would like to extend our thanks Dr Uncle Mick Adams for his cultural review and guidance in the development of the 'Culture and psychology' and 'Indigenous psychology' chapters, and for his general advice on cultural and Indigenous content throughout the book. Uncle Mick is a respected Aboriginal Elder and a social worker with over 50 years' experience as an Indigenous health sector leader in Australia.

We would also like to thank Bethanie Gouldthorp and Graeme Gower for their contributions to earlier editions of this text.

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CHAPTER 1

INTRODUCING PSYCHOLOGY

Psychology as a discipline has changed immensely since its humble beginnings. There is an amazing array of professional and applied areas that people with psychological training now work in. In this opening chapter, we provide an overview of psychology as a discipline and many of the more specialised areas in which psychologists work. However, the main focus is on providing an understanding of the theoretical and applied work of the discipline of psychology. It is important to note that the knowledge that you will gain from using this book underpins much of human behaviour, which is relevant and may be applied to many other disciplines and professions. We describe the linkages that tie these areas to one another and to other subjects, such as economics and medicine, and how research in psychology is being applied in everyday life. We then tell the story of how psychology developed and the various ways in which psychologists approach their work.

LEARNING OBJECTIVES

On completion of this chapter, you should be able to:

- LO1 define psychology
- LO2 understand the history of psychology
- LO3 describe the different approaches to the science of psychology
- LO4 understand the diversity of psychology
- LO5 develop an awareness of the knowledge, skills and values that reflect the science and application of psychology, and the possible career pathways in psychology.

APPLYING PSYCHOLOGY

1. Psychologists are able to work in a variety of settings, such as mental health facilities, schools, private practice, and so forth. What are some other settings for which psychology provides an excellent background?
2. Can studying psychology equip you with skills such as good oral and written communication skills and numeracy skills, well-developed computer skills, the ability to find and research information, and environmental awareness?

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INTRODUCTION

A diverse range of employment opportunities is on offer when you study psychology. Studying psychology at an undergraduate level provides you with a range of skills and competencies that enable you to work in many different fields. In addition, some people choose to pursue postgraduate studies and become registered psychologists. In this book, we endeavour to provide you with the knowledge to consider different pathways for your future studies and employment.

The following are examples of people who have applied the skills and knowledge they gained in their study of psychology to their role in the workplace:

- Nadine completed an undergraduate degree in psychology and then decided to seek employment before pursuing further studies. She worked in events management, where she was able to effectively use her excellent oral and written communication skills, knowledge of human behaviour, and problem-solving ability in a timely and ethical manner. After a year in the workforce, Nadine decided to study counselling at a postgraduate level.
- Mary has a passion for supporting migrant and refugee communities and groups. After graduating with her undergraduate degree in psychology she obtained work in her local migrant resource centre supporting immigrants and refugees to settle in Australia.
- As an Aboriginal man Dennis was determined to make a difference to the health outcomes of his community in remote Western Australia. After completing his undergraduate degree in psychology he undertook further training as an Aboriginal Health Practitioner and obtained work in the Aboriginal Community Controlled Health Service in his home community.
- Donna received an honours degree in psychology and was able to apply her high-level research skills when she started work in a large metropolitan hospital's sleep clinic. Using her knowledge and understanding of psychological theories related to sleep, Donna has progressed in her place of employment and now coordinates the sleep clinic.
- Gerry completed a Master of Applied Psychology degree where he focused on community psychology. He sought employment in a non-government organisation in a regional location, where his role involves working with families to support children with learning difficulties.
- As a graduate with a Master of Applied Psychology with a clinical focus, Josey completed supervised practice that enabled her to establish her own private clinical practice, which now employs three clinical staff.
- Following completion of her honours degree in psychology, Eleanor went on to do a PhD, during which she completed ground-breaking research into effective behavioural interventions for children with autism spectrum disorder. She now works as an academic in a university and also consults privately with other organisations.

These people are doing fascinating work in different areas, and some are employed as psychologists in one or more of psychology's many specialty areas, or *subfields*. Most of these people took their first psychology course without realising how many of these subfields there are, or how many different kinds of jobs are open to people who study psychology. But each of these people found something in psychology – perhaps something unexpected – that captured their interest, and they were intrigued. And who knows? By the time you have finished this book and your course, you may have found some aspect of psychology so compelling that you will want to make it your life's work too. Whatever your eventual career choice, we think you will benefit from the deeper understanding of human behaviour learnt during your study of psychology. At the very least, we hope you enjoy learning about psychology, the work of psychologists, and how that work benefits people everywhere.

There are a number of perspectives that underpin the structure of this book. In each chapter, we will highlight the application of psychological knowledge and skills through the appropriate graduate competencies of the Accreditation Standards for Psychology Programs (Standards) and the Accreditation Standards: Graduate Competencies. The Australian Psychology Accreditation Council (APAC) is the accrediting authority for psychology programs (APAC, 2019a). The graduate competencies are divided into *foundational competencies* for those undertaking a Bachelor degree in psychology, *pre-professional competencies* for those taking a fourth-year level program such as an Honours degree, and *professional competencies* at a Masters or Professional Doctoral

degree level. An important aspect of this text is the focus on using psychological knowledge, and the development of psychological literacy, which we discuss further toward the end of this chapter.

1.1 THE WORLD OF PSYCHOLOGY: AN OVERVIEW

psychology the science that seeks to understand behaviour and mental processes and to apply that understanding in the service of human welfare

Psychology is the science that seeks to understand human behaviour, social interaction and mental processes, taking into account physical attributes and interaction with the environment. Generally, the goals of psychology are to understand, explain and predict human behaviour in different contexts to promote a healthy life and human welfare.

Psychology training begins with an undergraduate degree, which enables students to develop psychological knowledge and skills and apply them to a diverse range of areas, such as those described in the examples at the beginning of this chapter. These provide insights into the different outcomes and pathways that students of undergraduate psychology may take. Many students who complete an undergraduate psychology degree utilise their skills and knowledge in different careers without formally completing postgraduate studies to become a psychologist. A more detailed description of how to become a registered psychologist in Australia and New Zealand is given at the end of this chapter and online in Appendix A, 'Careers for psychology graduates'.

To begin to appreciate all of the things that are included under the umbrella of *behaviour* and *mental processes*, TRY THIS ↘ take a moment to think about how you would answer this question: Who are you? Would you describe your personality, your 20/20 vision, your interests and goals, your skills and accomplishments, your IQ, your cultural background, or perhaps a physical or emotional problem that bothers you? You could have listed these and many other things about yourself, and every one of them would reflect some aspect of what psychologists mean by behaviour and mental processes. It is no wonder, then, that this book's table of contents features so many different topics, including some, such as vision and hearing, that you may not have expected to see in a book about psychology. The topics have to be diverse in order to capture the full range of behaviours and mental processes that make you who you are and that come together in other ways in people of every culture around the world. And of course, psychology is interested in the ways that people interact and engage with one another. We are not just the sum total of our behaviour and mental processes. People are inherently social (for more see Chapter 14 on social psychology).

Some of the world's half-million psychologists focus on what can go wrong in behaviour and mental processes – psychological disorders, problems in childhood development, stress-related illnesses and the like – while others study what goes right. They explore, for example, the factors that lead people to be happy and satisfied with their lives, to achieve at a high level, to be creative, to help others, and to develop their full potential as human beings. This focus on what goes right, on the things that make life most worth living, has become known as **positive psychology** (Donaldson & Rao, 2017; Lopez, Pedrotti, & Snyder, 2014), and you will see many examples of it in the research described throughout this book.

positive psychology a field of research that focuses on people's positive experiences and characteristics, such as happiness, optimism and resilience

Subfields of psychology

When psychologists choose to focus their attention on certain aspects of behaviour and mental processes, they enter one of psychology's subfields. Let's look at the typical interests and activities of psychologists in each subfield; more will be described in later chapters.

This section outlines many of the subfields of psychology. However, it is important to realise that there are nine areas of psychology that have been endorsed (that is, recognised) by the Psychology Board of Australia, and that also reflect the nine colleges within the Australian Psychological Society; namely, clinical, clinical neuropsychology, community, counselling, educational and developmental, forensic, health, organisational, and sport and exercise. In addition, there are currently 47 special interest groups (e.g., Aboriginal and Torres Strait Islander peoples and psychology, psychologists in oncology, and so on). The New Zealand Psychological Society has eight professional institutes and special interest groups that members may join:

clinical, community, counselling, criminal justice and forensic, educational and developmental, organisational, health, and special interest group (coaching). These groups provide members with opportunities to attend professional development activities and meet with other psychologists who work in similar areas of practice. The Australian Psychological Society and the New Zealand Psychological Society have a reciprocal relationship. If you are fully registered with one society, you will be able to apply to register with the other society. For more on these societies and the Psychology Board of Australia, see the upcoming 'Studying and working in psychology in Australia and New Zealand' section.

We will now take a quick look at the typical interests and activities of psychologists in each subfield. Please be aware that we are using the term 'psychologist' loosely to include psychological scientists (who work in different subfields) as well as registered psychologists. We will describe their work in more detail in later chapters. Bear in mind though, that use of the term 'psychologist' to describe yourself is restricted to those who satisfy the requirement of the Psychology Board of Australia for registration and practice, otherwise you will be in breach of the *Health Practitioner Regulation National Law Act 2009*.

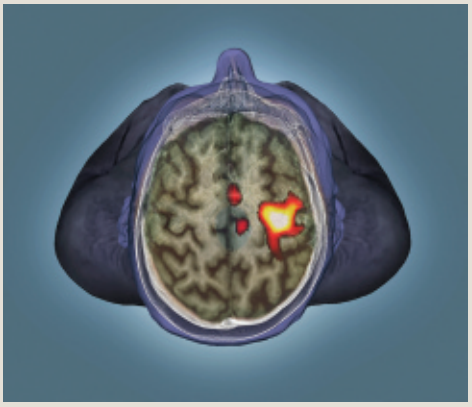
Biological psychology

Biological psychologists, also called *physiological psychologists*, use high-tech scanning devices and other methods to study how biological processes in the brain affect, and are affected by, behaviour and mental processes (see **Figure 1.1**). Have you ever had the odd feeling that a new experience, such as entering an unfamiliar house, has actually happened to you before? Biological psychologists studying this illusion of déjà vu (French for 'already seen') suggest that it may be due to a temporary malfunction in the brain's ability to combine incoming information from the senses, creating the impression of two 'copies' of a single event (Brown, 2004). In Chapter 3, 'Biological aspects of psychology', we describe biological psychologists' research on many other topics, such as how your brain controls your movements and speech, and what organs help you cope with stress and fight disease.

biological psychologists psychologists who analyse the biological factors influencing behaviour and mental processes; also called physiological psychologists

FIGURE 1.1 Visualising brain activity

Functional magnetic resonance imaging (fMRI) techniques allow biological psychologists to study the brain activity accompanying various mental processes.



Science Photo Library/Zephyr

Cognitive psychology

TRY THIS ↘ Stop reading for a moment and look left and right. Your ability to follow this suggestion, to recognise whatever you saw, and to understand the words you are reading right now are the result of mental, or *cognitive*, abilities. Those abilities allow you to receive information from the outside world, understand it and act on it. **Cognitive psychologists** study mental abilities such as sensation and perception, learning and memory, thinking, consciousness, intelligence and creativity. Cognitive psychologists have found, for example, that we do not just receive incoming information – we mentally manipulate it. Notice that the drawing in **Figure 1.2** stays physically the same, but two different versions emerge, depending on which of its features *you* emphasise.

cognitive psychologists psychologists whose research focuses on analysis of the mental processes underlying judgement, decision-making, problem-solving, imagining and other aspects of human thought or cognition

FIGURE 1.2 Husband and father-in-law

This figure is called 'Husband and father-in-law' (Botwinick, 1961) because you can see either an old or a young man, depending on how you mentally organise its features. The elderly father-in-law faces to your right and is turned slightly towards you. He has a large nose, and the dark areas represent his coat pulled up to his protruding chin. However, the tip of his nose can also be seen as the tip of a younger man's chin; the younger man is in profile, also looking to your right, but away from you. The old man's mouth is the young man's neckband. Both men are wearing a broad-brimmed hat.

engineering psychologists psychologists who study human factors in the use of equipment and help designers create better versions of that equipment

Applications of cognitive psychologists' research are all around you. The work of those whose special interest is **engineering psychology** – also known as *human factors* – has helped designers create computer keyboards, mobile phones, MP3 players, websites, aircraft instrument panels, car navigation systems, nuclear power plant controls, and even TV remotes that are more logical, easier to use and less likely to cause errors. You will read more about human factors research and many other aspects of cognitive psychology in several chapters of this book.

Developmental psychology

developmental psychologists psychologists who seek to understand, describe and explore how behaviour and mental processes change over the course of a lifetime

Developmental psychologists describe the changes in behaviour and mental processes that occur from birth through old age and try to understand the causes and effects of those changes (see **Figure 1.3**). Their research on the development of memory and other mental abilities, for example, is used by judges and lawyers in deciding how old a child has to be in order to serve as a reliable witness in court or to responsibly choose which divorcing parent to live with. Chapter 10, 'Human development', describes other research by developmental psychologists and how it is being applied in areas such as parenting, evaluating day care, and preserving mental capacity in elderly people.

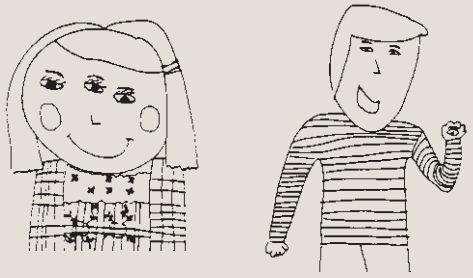


FIGURE 1.3 Where would you put a third eye?

In a study of how thinking develops, children were asked to show where they would place a third eye if they could have one. Nine-year-old children, who were still in an early stage of mental development, drew the extra eye between their existing eyes, 'as a spare'. Having developed more advanced thinking abilities, 11-year-olds drew the third eye in more creative places, such as the palm of their hand 'so I can see around corners'.

Personality psychology

personality psychologists psychologists who focus on people's unique characteristics

Personality psychologists study individuality – the unique features that characterise each of us. Using personality tests, some of these psychologists seek to describe how your own combination of personality traits, like your fingerprints, differs from everyone else's in terms of traits such as openness to experience, emotionality, reliability, agreeableness and sociability. Others study the combinations of personality traits that are associated with the appearance of ethnic prejudice, depression or vulnerability to stress-related health problems. And personality psychologists interested in positive psychology are trying to identify and understand the human strengths that help people to remain optimistic, even in the face of stress or tragedy, and to find happiness in their lives (Snyder & Lopez, 2009).

Clinical, counselling, community and health psychology

Clinical psychologists and **counselling psychologists** conduct or apply research on the causes and treatment of mental health issues and offer services to assist people to overcome those disorders. Research is improving our understanding of the genetic and environmental forces that shape disorders ranging from anxiety and depression to schizophrenia and autism, and provides guidance to therapists about which treatment methods are likely to be most effective with each category of disorder.

clinical and counselling psychologists psychologists who seek to assess, understand, modify and prevent behaviour disorders

Community psychologists focus on the prevention of psychological disorders by promoting people's resilience and other personal strengths. They also work with communities, non-government organisations and neighbourhood organisations to reduce crime, poverty and other stressful conditions. Community psychologists try to understand the individual and systems interactions, and work from a preventative systemic orientation. They are experts in needs analysis for communities at risk, such as immigrant groups and rural and remote communities; community asset mapping of social capital and related resources; community-generated problem-solving based on collaboration and social justice; community capacity building to manage change and address risks and threats; evaluation of psycho-social environments with respect to sense of community, quality of life, social support networks, resilience, etc.; and social impact assessment related to environmental issues, such as drought and climate change (Australian Psychological Society, 2019).

community psychologists psychologists who work with all types of communities and individuals and strive for change in social systems

Health psychologists study the relationship between risky behaviours, such as smoking or lack of exercise, and the likelihood of suffering health issues, such as heart disease, stroke, cancer or hearing loss. They also explore the impact that illnesses, such as diabetes, cancer and multiple sclerosis, can have on people's behaviour, thinking, emotions and family relationships. Their research is applied in programs that help people to cope effectively with illness, as well as to reduce the risk of cancer, heart disease and stroke by changing the behaviours that put them at risk (see the Snapshot 'Getting ready for surgery').

health psychologists psychologists who study the effects of behaviour and mental processes on health and illness, and vice versa

Getting ready for surgery SNAPSHOT

Health psychologists have learnt that when patients are mentally prepared for a surgical procedure, they are less stressed from undergoing the procedure and recover more rapidly. Their research is now routinely applied in hospitals through programs in which children and adults are given helpful information about what to expect before, during and after their operations.

Dorothy Littell Greco/The Image Works

In Australia and New Zealand, clinical, counselling, community and health psychologists have a master's degree or a doctorate in psychology. All of these psychologists differ from *psychiatrists*, who are medical doctors specialising in abnormal behaviour (psychiatry). You can read more about the work of clinical, counselling, community and health psychologists in Chapter 11, 'Health, stress and coping', and in Chapter 13, 'Psychological disorders and treatment'.

Educational and school psychology

Educational psychologists conduct research and develop theories about teaching and learning. The results of their work are applied in programs designed to improve teacher training, refine school curricula, reduce truancy rates, and help students learn more efficiently and remember what they learn. For example, they have supported the use of the 'jigsaw' technique, a type of classroom activity in which children from various ethnic groups must work together to complete a task or solve a problem. These cooperative experiences appear to promote learning, generate mutual respect and reduce intergroup prejudice (Aronson, 2004).

educational psychologists psychologists who study methods by which instructors teach and students learn, and who apply their results to improve those methods

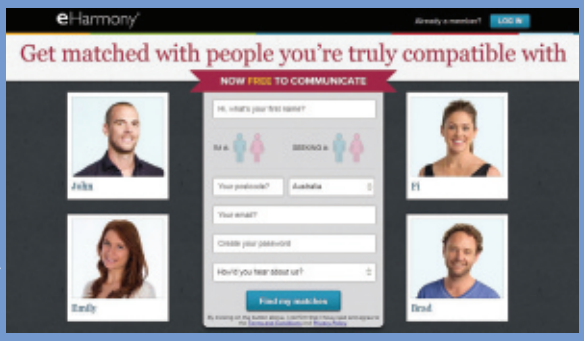
school psychologists psychologists who work with teachers and students, assist in identifying students' academic challenges and opportunities, provide counselling to students, and set up programs to improve students' achievement and aspirational growth

social psychologists psychologists who study how people influence one another's behaviour, social interactions and attitudes, individually and in groups

School psychologists provide support to teachers and students, and they help to identify academic challenges and opportunities and to set up programs to improve students' achievement and satisfaction in school. They are also involved in activities such as the early detection of students' mental health issues or concerns, and crisis intervention.

Social psychology

Social psychologists study the ways in which people socially interact with those around them, how they think about themselves and others, and how people influence one another. Their research on persuasion has been applied to the creation of safe-sex advertising campaigns designed to stop the spread of AIDS (acquired immune deficiency syndrome) or quit smoking campaigns. Social psychologists also explore how peer pressure affects us, what determines who we like (or even love; see the Snapshot 'Got a match?'), and why and how prejudice forms. They have found, for example, that although we may pride ourselves on not being prejudiced, we may actually hold unconscious negative beliefs about certain groups that affect the way we relate to people in those groups. Chapter 14, 'Social psychology', describes these and many other examples of research in social psychology.



eHarmony

SNAPSHOT Got a match?

Some commercial matchmaking services, such as eHarmony (eharmony.com.au), apply social psychologists' research on interpersonal relationships and attraction in an effort to pair up people whose characteristics are most likely to be compatible. According to eHarmony, it uses the data of over 200 000 couples globally to identify personality dimensions that influence how well two people are suited to one another.

organisational psychologists psychologists who study ways to improve efficiency, productivity and satisfaction among workers and the organisations that employ them

sport psychologists psychologists who explore the relationships between athletic performance and such psychological variables as motivation and emotion

forensic psychologists psychologists who assist in jury selection, evaluate defendants' mental competence to stand trial, and deal with other issues involving psychology and the law

environmental psychologists psychologists who study the effects of the physical environment on behaviour and mental processes

cultural and cross-cultural psychologists psychologists who help us to better understand the way culture affects our lives and to better understand our, and others', place in the world

Organisational psychology

Organisational psychologists conduct research on leadership, stress, competition, pay rates and other factors that affect the efficiency, productivity and satisfaction of people in the workplace. They also explore topics such as worker motivation, work team cooperation, conflict resolution procedures and employee selection methods. Learning more about how businesses and organisations work – or fail to work – allows organisational psychologists to make evidence-based recommendations to help businesses work better. Today, companies all over the world are applying research from organisational psychology to promote the development of *positive organisational behaviour*. The results include more effective employee training programs, ambitious but realistic goal-setting procedures, fair and reasonable evaluation tools, and incentive systems that motivate and reward outstanding performance.

Other subfields

Our list of psychology's subfields is still not complete. **Sport psychologists** use visualisation and relaxation training programs to help athletes reduce excessive anxiety, focus attention and make other changes that let them perform at their best. **Forensic psychologists** (see the Snapshot 'Linking psychology and law') may assist police and other agencies in understanding criminals, evaluating the mental competence of defendants, providing psychological reports for court processes, and performing many other tasks related to psychology and the law. **Environmental psychologists** study the effects of the environment on people's behaviour and mental processes. The results of their research are applied by architects and interior designers as they plan or remodel university residences, shopping malls, auditoriums, hospitals, prisons, offices and other spaces to make them more comfortable and functional for the people who will occupy them. **Cultural and cross-cultural psychologists** study the interactions between differing cultural groups. This is increasingly important in a globalised world where people are travelling more and encountering people from a wide range of

countries and cultural backgrounds. Cultural psychologists can also help us to better understand the experiences of migrants, refugees and asylum seekers as they work to build new lives for themselves, often in places that are very unfamiliar to them.

Linking psychology and law SNAPSHOT

Forensic psychologists research the types of training required to appropriately carry out an investigative interview in the context of courts of law. With high representations of Aboriginal and Torres Strait Islander people in the Australian judicial system, there is a need for forensic psychologists to consider culturally appropriate communication and interactions (Powell & Bartholomew, 2003, 2011).

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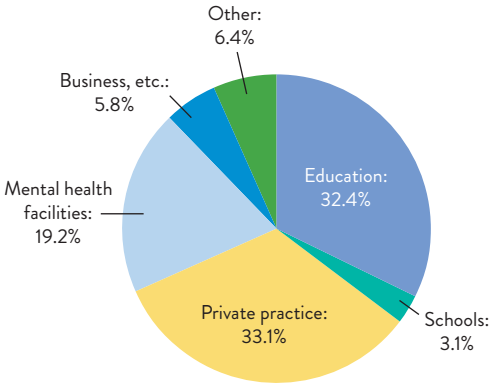
More information about the subfields we have mentioned – and some that we haven't – are available on the websites of the Australian Psychological Society (https://www.psychology.org.au) and the New Zealand Psychological Society (https://www.psychology.org.nz).

Where do the psychologists in all these subfields work? **Table 1.1** contains a summary of where the approximately 24 000 psychologists in Australia and the 1000 psychologists in New Zealand find employment, as well as the kinds of things they typically do in each setting.

TABLE 1.1 Typical activities and work settings for psychologists

The fact that psychologists can work in such a wide variety of settings and do so many interesting – and often well-paid – jobs helps account for the popularity of psychology at universities. As we noted earlier, many people who study psychology do not become psychologists. Psychology courses also provide excellent background for students planning to enter medicine, law, business, teaching and many other fields.

Percentage of psychologists	Work setting	Typical activities
	Universities and professional schools	Teaching, research and writing, often in collaboration with colleagues from other disciplines
	Mental health facilities (e.g., hospitals, clinics, counselling centres)	Testing and treatment of children and adults
	Private practice (alone or in a group of psychologists)	Testing and treatment of children and adults; consulting with business and other organisations
	Business, government and other organisations	Testing potential employees; assessing employee satisfaction; identifying and resolving conflicts; improving leadership skills; offering stress management and other employee assistance programs; improving equipment design to maximise productivity and prevent accidents
	Schools (including those for intellectually disabled and emotionally disturbed children)	Testing mental abilities and other characteristics; identifying children with problems; consulting with parents; designing and implementing programs to improve academic performance
	Community organisations and not for profit (including local government)	Working with community groups and organisation to enhance community resilience; developing prevention programs and other community initiatives to enhance quality of life
	Other	Teaching prison inmates; research in private institutes; advising legislators on educational, research or public policy; administering research funds; research on effectiveness of military personnel, and so on

Source: Employment characteristics of APA members by membership status, 2015.