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PSYCHOLOGY

FIFTH AUSTRALIAN AND NEW ZEALAND EDITION

APS Australian Psychological Society

WILEY

Psychology

FIFTH AUSTRALIAN AND NEW ZEALAND EDITION

Lorelle Burton

Drew Westen

Robin Kowalski

WILEY

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PREFACE

My teaching philosophy is all about challenging students to become critical thinkers and self-directed learners. My aim is to arouse their passion and interest in the material they are studying. I believe this is the key to success. I feel that I am successful when students become totally engaged in the learning process and take on more responsibility for motivating and directing their own search for knowledge.

As the author of *Psychology: 5th Australian and New Zealand Edition*, my philosophy of writing an introductory psychology text reflects this same teaching philosophy. I have drawn on my 20-plus years' experience in the teaching of foundation psychology to write this text. A primary research interest remains understanding how educators may best respond to issues of student diversity in their learning and teaching.

A major objective is to consider the various individual and sociocultural factors that students bring with them to the learning environment and to explore methods for enhancing learning for all students, regardless of their location, cultural background or experience. Given my areas of expertise and research interests, it will not surprise you to learn that this edition includes more extensive coverage of research related to cross-cultural and Indigenous psychology issues and continues to draw on research emerging from Australia, New Zealand and other parts of the Asia–Pacific region. The current edition comprises a comprehensive new section on neuroplasticity — the ability of the brain to change itself, and its relevance to everyday life. Fascinating case studies documenting the brain's malleability are provided throughout the text to showcase how you can reprogram your body's response to everyday stress. There is also a comprehensive update on the social determinants of mental health and wellbeing. The current edition systematically covers mindfulness and how it can positively contribute to wellbeing, and is central to positive psychology research and application. Additionally, recent research findings on the positive and negative psychological implications of social media are comprehensively covered throughout this current edition. There are also new features of 'psychology in practice', with currently registered psychologists discussing various topics to enable students to apply theory to practice.

The principal aim of *Psychology: 5th Australian and New Zealand Edition* is to enhance the quality of the learning experience for all students learning psychology in Australia and New Zealand, by including material that is both relevant and interesting to them. First, the text provides a local cultural context that will help students to better relate to the subject matter and engage in the learning process. For example, the inclusion of local examples and research that reflect students' personal experiences will help them to understand the psychological concepts they are studying. Second, the text is compatible with the way undergraduate psychology is taught in Australian and New Zealand universities today.

My goal has also been to try to give students a sense of the 'big picture' of how we think, feel and behave, and how our evolving science continually addresses and readdresses the central questions that brought most of us into the field — questions about the relationship between psychological events and their neural underpinnings, between cognition and emotion, between cultural processes and human evolution, between nature and nurture and so forth. Introductory psychology is probably the last time most students — and psychologists — get a broad view of our field. In fact, I suspect one of the greatest personal benefits for those of us who teach introductory psychology is that we are continually exposed to new information, often in domains far from our own areas of expertise, which stretches and challenges our imaginations.

Writing a textbook is always a balancing act, with each edition adjusting scales that were tipped a bit too far in one direction with the previous one. Probably the most difficult balance to achieve in writing an introductory text is how to cover what we know (at least for now) and what is on the cutting edge, without making an encyclopaedia, particularly in a field that is moving forward so rapidly. Another challenge is to help those who might desire more structure to learn the material, without placing roadblocks in the path of students who would find most pedagogical devices contrived and distracting. A final balancing

act involves presenting solid research in a manner that is accessible, lively and thought-provoking. I believe that this fifth edition of *Psychology* successfully achieves equilibrium across these different issues. The revisions have served to complement the original text, while maintaining its integrity and pedagogy. The text still speaks with one voice — albeit a voice with a trace of an Australian accent. I am very grateful for the strong support the textbook has received from students and my academic colleagues across Australasia. I am sure you will find the fifth edition even more useful and enjoyable than the fourth.

I am especially grateful to the many academics and students from across the globe and in Australia and New Zealand who provided distinguished commentaries and insights in this new edition. The insightful *Commentary* and *One step further* features greatly enhance each chapter's content and enable students to extend their thinking of the topic. I am indebted to Juliet Ayre, a psychology student at Massey University in New Zealand, who contacted me to enquire about taste aversion, and provided the motivation for sharing details of a class experiment led by her lecturer, Dr Linda Jones. I'm also beholden to Paul Domathoti, a student of psychology at Charles Sturt University, who contributed excellent forethought in his diligent review of the text. I am enormously thankful to Dr Tracy Woolrych from the University of Wollongong, who provided a comprehensive review on statistical principles in psychological research that guided this edition's update of the chapter two supplement. I'm also grateful to all professional psychologists in clinical practice who willingly shared their personal insights and experiences to enhance the learning experience for students. I'm also enormously appreciative of Julianne Kealey and Nichole Morrin, who helped source new material across all chapters and helped make this the best edition yet! Finally, I would like to thank Lee Campbell, Andrew Short, Luca Lampariello and Kathryn Smith for their valuable contribution to the video content.

Commentary contributors (in order of chapter) — Associate Professor Susana Gavidia-Payne, RMIT; Professor John Reece, Australian College of Applied Psychology; Professor Simon Crowe, LaTrobe University; Dr Mehmet Mahmut, Macquarie University; Professor Kevin McConkey, University of New South Wales; Professor Ottmar Lipp, Curtin University; Professor Rick Richardson, University of New South Wales; Dr Cheng-Wei Wang, University of New South Wales; Professor Nick Burns, University of Adelaide; Professor Eddie Harmon-Jones, University of New South Wales; Dr Cindy Harmon-Jones, University of New South Wales; Carolyn MacCann, University of Sydney; Richard D. Roberts, University of Sydney; Dr Jenny Richmond, University of New South Wales; Anna Barron, Flinders University; Dr Lydia Woodyatt, Flinders University; Professor Emma Thomas, Flinders University; Professor David Clarke, University of Melbourne; Dr Amanda D. Hutchinson, University of South Australia; Dr Nadine Pelling, University of South Australia; Professor Niki Harré, University of Auckland; Dr Helen Madden, University of Auckland; and Professor Pat Dudgeon, University of Western Australia.

One step further contributors (in order of chapter) — David Mutton, Western Sydney University; Dr Kenneth I. Mavor, University of St Andrews, United Kingdom; Dr Clemence Due, University of Adelaide; Professor Ulrich Schall, University of Newcastle; Dr Sandra Garrido, Western Sydney University; Professor Michael Gradisar, Flinders University; Associate Professor Matthew Browne, Central Queensland University; Professor Craig Speelman, Edith Cowan University; Dr Nenagh Kemp, University of Tasmania; Associate Professor Sabina Kleitman, University of Sydney; Dr Guy Curtis, Murdoch University; Dr Lily Amorous; Dr Ben Williams, Swinburne University of Technology; Dr Sian A. McLean, Victoria University; Professor Jane Shakespeare-Finch, Queensland University of Technology; Professor Gordon Parker, University of New South Wales; Dave Clarke, Queensland University of Technology; Dr Angelo De Gioannis, Queensland University of Technology; Dr Charni Gunaratne, Charles Sturt University; Associate Professor Blake M. McKimmie, University of Queensland; Dr Ella R. Kahu, Massey University; Associate Professor Keith Tuffin, Massey University; Associate Professor Stefania Paolini, University of Newcastle; Dr Bruce Findlay, Swinburne University of Technology; and Emeritus Professor Anita S. Mak, University of Canberra.

Finally, I'd like to thank the team at John Wiley & Sons, including Terry Burkitt (Publishing Director), Lori Dyer (Publisher), Kylie Challenor (Managing Editor), Jessica Carr (Production Editor), Emma Knight (Digital Production Editor), Tara Seeto (Publishing Coordinator) and Laura Brinums (Copyright and Image Researcher) for all their hard work on the project.

FEATURES OF THIS EDITION

Additional local research and examples in each chapter

Adapting the text to the Australian and Asia–Pacific landscape involved drawing on the considerable body of research emerging from Australia and New Zealand, as well as including statistics relevant to local experience. I believe that presenting research and literature relevant to students' own countries considerably enhances the quality of the learning experience. The adaptation was an exciting opportunity to optimise the benefits of the original text, by placing it in a cultural context familiar to local students. In this fifth edition, I have continued to focus on citing recent work that provides up-to-date information and examples for each chapter.

Enhanced cross-cultural and indigenous psychology coverage

Cross-cultural and indigenous psychology issues are covered both where relevant throughout the entire text, and also in a stand-alone chapter (chapter 19). Such coverage allows for maximum flexibility in teaching cross-cultural and indigenous psychology in an Introductory Psychology course.

Chapter 19 embeds a contextual analysis of indigenous issues in psychology. In this chapter, I explain the issues, psychological concepts, history and research of this broad and complex field. The chapter has been written to be relevant to readers in both Australia and New Zealand, yet maintains substantial contact with the broader, international literature. Some of the key issues addressed in this edition include:

- the Australian *Closing the Gap* report
- exploring attitudes and discrimination towards refugees and asylum seekers
- the Australian Psychological Society's 2016 apology to Indigenous Australians
- examining the prevalence and factors affecting Aboriginal death by suicide
- recognising the need for cultural awareness training and developing culturally competent psychologists.

A proven pedagogical framework: an integrated study package

Several key conceptual features remain from earlier editions that give *Psychology: 5th Australian and New Zealand Edition* its distinctive 'signature'. They arose from five objectives in creating this book:

- to focus on both the biological basis of psychology and the role of culture in shaping basic psychological processes
- to provide a conceptual orientation that would capture the excitement and tensions in the field
- to help students understand the logic of scientific discovery and hypothesis testing as applied to psychological questions
- to suggest ways of integrating psychological theories and knowledge across subfields
- to employ language that would be sophisticated but engaging.

Balanced coverage of multiple perspectives

Earlier editions have endeavoured to acquaint students not just with seminal research but with the conceptual frameworks that guide that research across subdisciplines. With this edition, I have once again tried to describe the strengths and limitations of the major perspectives, with increased emphasis on humanistic, cognitive and evolutionary perspectives and on potential integrations across perspectives.

From the start, students are challenged to think about psychological phenomena from multiple perspectives. Chapter 1 is not perfunctory; it introduces five perspectives — cognitive, evolutionary, behaviourist, humanistic and psychodynamic — in enough depth to allow students to begin conceptualising psychological data rather than simply memorising a list of facts, names or studies. At the same time, I have

avoided slavishly introducing paragraphs on each perspective in every chapter, since some perspectives obviously apply better to certain phenomena than to others.

Biology and culture: a micro to macro approach

A consistent theme of the text, introduced in the first chapter, is that biology and culture form the boundaries of psychology. Understanding people means attending simultaneously to biological processes, psychological experience, and cultural and historical context. The focus on biological and neural underpinnings echoes one of the major trends in contemporary psychological science, as technological developments allow progressively more sophisticated understanding of the neural substrates of psychological experience. The focus on culture has been a central feature of *Psychology* since the publication of the first edition.

One of the key features of this text is the integration of both neuro-scientific and cross-cultural research into the fabric of the narrative. Each chapter of this text contains an extended discussion that shows the way psychological experience is situated between the nervous system and cultural experience, called *From brain to behaviour*. These special features flow integrally from the text and are not presented as isolated 'boxes'. Thus, students will get the message that biological and cultural material is integral to understanding psychology, not somehow superfluous or added on. In addition, *A global vista* features, which explore psychological phenomena in other cultures, can be found in the online resources.

Conceptual orientation

The text is conceptually oriented. It attempts, within the limits of my objectivity and expertise (considerable limits, no doubt), to give a fair and compelling account of the different perspectives psychologists take in understanding psychological phenomena. I have a healthy respect for each approach and assume that if thousands of my colleagues find an approach compelling, it probably contains something that students should know.

Research focus

This text is about psychological science. A student should come out of an Introductory Psychology class not only with a sense of the questions and frameworks for answering them, but also with an appreciation for how to obtain psychological knowledge. Thus, chapter 2 is devoted to research methods, and the style reflects an effort to engage, not intimidate, so that students can see how methods actually make a difference. A supplementary chapter on statistical principles, which even the most seriously maths phobic can understand, is also provided. From start to finish, students read about specific studies so that they can learn about the logic of scientific investigation.

Language

Above all, I wanted to avoid writing in 'textese', a language that presents dry summaries of data for students to memorise instead of engaging them in thinking about psychology. *Psychology: 5th Australian and New Zealand Edition* offers a solid and comprehensive account of the principles of psychology in what I hope is an accessible, lively and thought-provoking style. Throughout the text, I aim for clarity and introduce terminology only when it enlightens, not obscures. I am not shy about using metaphor or weaving a narrative, but not a single term in this text is defined by context alone. If students need to understand a concept, they will see the definition in the same sentence in which the word is boldfaced. I have also tried to keep the language at a level appropriate to first-year university students, but if they have to look up an occasional word, I will not lose sleep over it. (I had to look up a few in writing it!)

As a teacher and writer, I try to make use of one of the most robust findings in psychology: that memory and understanding are enhanced when target information is associated with vivid and personally relevant material. Each chapter begins with a case or an event that lets students know why the topic is important and why anyone might be excited about it. None of the cases are invented; this is real Australian and New Zealand material, and the questions raised in the opening vignette re-emerge throughout each chapter.

Learning aids

I have tried to avoid pedagogy that is condescending or unnecessary. In my experience, students never follow up on annotated recommendations for future reading, so I have not cluttered the ends of chapters with them. On the other hand, most students need guidance in studying the material. Therefore, I have retained the learning aids from the last edition that have proven effective in helping students learn: *Central questions*, *Making connections*, *Apply & discuss*, boldfaced *key terms*, *interim summaries* and *chapter summaries*. The inclusion of the interim summaries reflects both feedback from lecturers and the results of research suggesting that distributing conceptual summaries throughout a chapter and presenting them shortly after students have read the material is likely to optimise learning. Additionally, the review, discussion and application questions at the end of each chapter enable students to actively engage with the material and self-test their understanding of the key concepts.

Organisation

I tried to organise *Psychology: 5th Australian and New Zealand Edition* in a way that would be convenient for most instructors and yet follow a coherent design. Of course, different instructors organise things differently, but I do not think many will find the organisation idiosyncratic.

Illustration and design

Consistent with earlier editions, I took tremendous care to select and design only figures and tables that actually add something and that do not just make the pages look less ominous. Consistent with the goal of providing students with a more integrative perspective on psychology, and with the goal of creating 'the thinking student's introduction to psychology', this edition again includes an integrated study package built into the structure of the text, without cluttering the margins and distracting from the narrative.

In this edition, I continue to integrate photos with the text in a way that fosters critical thinking and helps students see the connections between concepts presented in different chapters. Instead of using photos primarily to brighten the text or provide interesting diversions (both lofty aims, of course), I have used them to link concepts and visual images, through the two pedagogical features called *Making connections* and *Apply & discuss*.

Dr Lorelle Burton
July 2018

ABOUT THE AUTHORS

Lorelle Burton

Lorelle Burton is Professor of Psychology in the Faculty of Health, Engineering and Sciences at the University of Southern Queensland (USQ). Lorelle is a fully registered psychologist and a full member of the Australian Psychological Society (APS). She commenced full-time teaching in 1996, with her primary areas of interest including foundation psychology and individual differences. Lorelle's passion for teaching psychology has been recognised with a number of teaching excellence awards, both locally and nationally. She received the USQ Award for Teaching Excellence in 2001, and the Dean's Award for Outstanding Contribution to the Faculty of Sciences in 2005 and 2006. She was awarded the 2004 Pearson Education and APS Psychology Early Career Teaching Award, and in 2006 she received a Carrick Australian Award for Teaching Excellence (Social Sciences) and a Carrick Australian Citation for Outstanding Contributions to Student Learning. In 2016 she received the APS Distinguished Contribution to Psychological Education Award.

One of the keys to Lorelle's success as a teacher is her commitment to developing innovative approaches to course design and delivery. She is deeply committed to the quality of learning experiences and the success of her students, and has passionately embraced new technologies as a means of creating exciting, interesting and meaningful learning environments. Via online discussion forums, interactive online exercises and multimedia delivery, she engages her students and enables them to become active and satisfied participants in their learning experiences. For example, she authored the widely used text entitled *An Interactive Approach to Writing Essays and Research Reports in Psychology*, currently in its fourth edition, which includes interactive practice exercises to help students quickly master the core referencing requirements in psychology and better manage their own learning needs. She also adapted the iStudy to accompany this latest edition of the text. Lorelle has a strong research track record focused on better understanding the factors that impact on student learning. She has presented and published multiple papers at national and international conferences in her specialised areas. Lorelle has been an invited assessor for national teaching excellence awards and grants and has led numerous national collaborative research projects on student transition. Lorelle's current research focus involves leading cross-community collaborations to promote community capacity building and wellbeing. Psychology is second to her main love in life — her family. Lorelle is married to Andrew Fox and they have two children, Emily and Benjamin.

Drew Westen

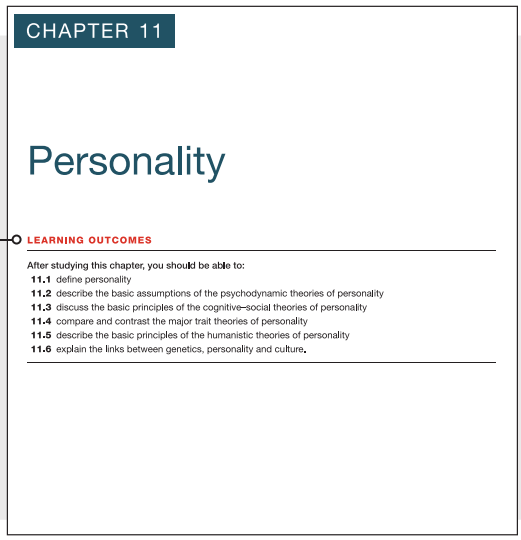
Drew Westen is Professor in the Department of Psychology and Department of Psychiatry and Behavioral Sciences at Emory University. He received his BA at Harvard University, an MA in Social and Political Thought at the University of Sussex (England) and his PhD in Clinical Psychology at the University of Michigan, where he subsequently taught for six years. While at the University of Michigan, he was honoured two years in a row by the *Michigan Daily* as the best teaching professor at the university, and was the recipient of the first Golden Apple Award for outstanding undergraduate teaching. More recently, he was selected as a G. Stanley Hall Lecturer by the American Psychological Association. Drew is an active researcher who is on the editorial boards of multiple journals, including *Clinical Psychology: Science and Practice*, *Psychological Assessment* and the *Journal of Personality Disorders*. His major areas of research are personality disorders, eating disorders, emotion regulation, implicit processes, psychotherapy effectiveness and adolescent psychopathology. His series of videotaped lectures on abnormal psychology, called *Is Anyone Really Normal*?, was published by the Teaching Company, in collaboration with the Smithsonian Institution. Drew also provides psychological commentaries on political issues for *All Things Considered* on National Public Radio. His main loves outside of psychology are his wife, Laura, and his daughter, Mackenzie. He also writes comedy music, has performed as a stand-up comic in Boston, and has performed and directed improvisational comedy for the President of the United States.

Robin Kowalski

Robin Kowalski is Professor of Psychology in the Department of Psychology at Clemson University. She received her BA at Furman University, an MA in General Psychology at Wake Forest University and her PhD in Social Psychology at the University of North Carolina at Greensboro. Robin spent the first 13 years of her career at Western Carolina University in Cullowhee, North Carolina. While there, she received the Botner Superior Teaching Award and the University Teaching-Research Award. She came to Clemson in 2003, where she has received the College of Business and Behavioral Science Undergraduate Teaching Excellence Award, the Board of Trustee's Award for Faculty Excellence and the National Scholar's Mentoring Award. She is also an active researcher who served on the editorial board for the *Journal of Social and Clinical Psychology*. She has written or edited nine books and has been published in many professional journals, including *Psychological Bulletin* and the *Journal of Experimental Social Psychology*. Robin has two primary research interests. The first focuses on aversive interpersonal behaviours, specifically cyber bullying and complaining. Her research on complaining has received international attention, including an appearance on NBC's *Today Show*. Her book, *Complaining, Teasing, and Other Annoying Behaviors*, was featured on National Public Radio's *All Things Considered*, and in an article in *USA Weekend*. Her book on cyber bullying entitled *Cyber Bullying: Bullying in the Digital Age* has an accompanying website: www.cyberbullyhelp.com. Her second research focus is health psychology, with a particular focus on organ donation and transplantation. Robin has twin boys, Noah and Jordan.

HOW TO USE THIS TEXT

Learning objectives
At the start of each chapter, numbered learning objectives are provided to guide you through the material to be learned. Each learning objective corresponds with the illustrative concept maps and major headings throughout the chapter. These numbered objectives are revisited in the end-of-chapter summary.



CHAPTER 11

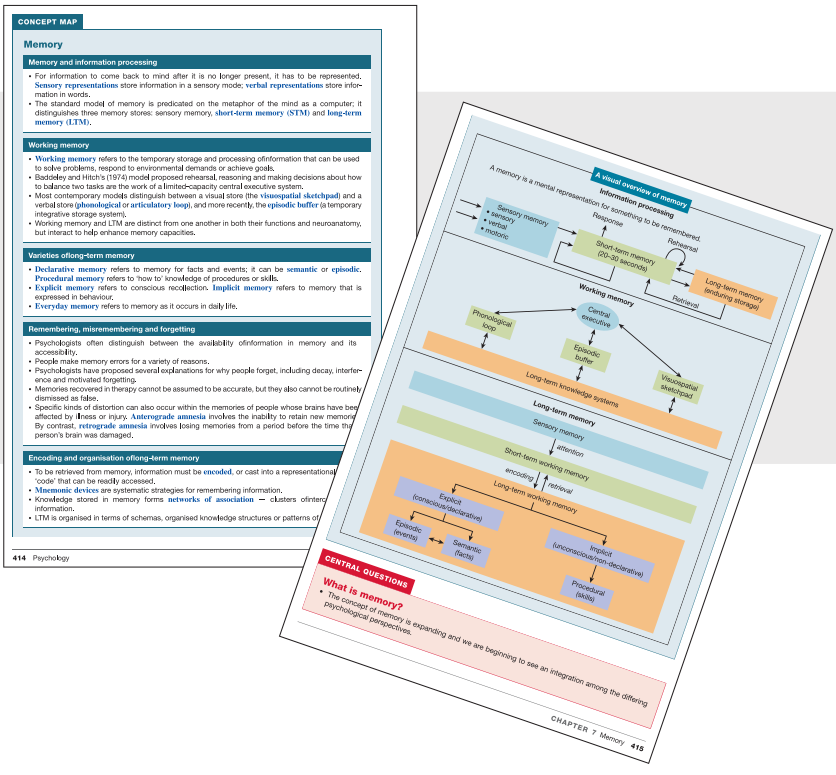
Personality

LEARNING OUTCOMES

After studying this chapter, you should be able to:

11.1 define personality
11.2 describe the basic assumptions of the psychodynamic theories of personality
11.3 discuss the basic principles of the cognitive–social theories of personality
11.4 compare and contrast the major trait theories of personality
11.5 describe the basic principles of the humanistic theories of personality
11.6 explain the links between genetics, personality and culture.

Concept maps
Each chapter opens with a concept map that corresponds with the numbered learning objectives, outlining the key psychological topics and concepts to be explored. This provides a visual overview of the chapter as a whole.



CONCEPT MAP

Memory

Memory and information processing

- For information to come back to mind after it is no longer present, it has to be represented. **Sensory representations** store information in a sensory mode; **verbal representations** store information in words.
- The standard model of memory is predicated on the metaphor of the mind as a computer; it distinguishes three memory stores: sensory memory, **short-term memory (STM)** and **long-term memory (LTM)**.

Working memory

- **Working memory** refers to the temporary storage and processing ofinformation that can be used to solve problems, respond to environmental demands or achieve goals.
- Baddeley and Hitch's (1974) model proposed rehearsal, reasoning and making decisions about how to balance two tasks are the work of a limited-capacity central executive system.
- Most contemporary models distinguish between a visual store (the **visuospatial sketchpad**) and a verbal store (**phonological** or **articulatory loop**), and more recently, the **episodic buffer** (a temporary integrative storage system).
- Working memory and LTM are distinct from one another in both their functions and neuroanatomy, but interact to help enhance memory capacities.

Varieties oflong-term memory

- **Declarative memory** refers to memory for facts and events; it can be **semantic** or **episodic**. **Procedural memory** refers to 'how to' knowledge of procedures or skills.
- **Explicit memory** refers to conscious recollection. **Implicit memory** refers to memory that is expressed in behaviour.
- **Everyday memory** refers to memory as it occurs in daily life.

Remembering, misremembering and forgetting

- Psychologists often distinguish between the availability ofinformation in memory and its accessibility.
- People make memory errors for a variety of reasons.
- Psychologists have proposed several explanations for why people forget, including decay, interference and motivated forgetting.
- Memories recovered in therapy cannot be assumed to be accurate, but they also cannot be routinely dismissed as false.
- Specific kinds of distortion can also occur within the memories of people whose brains have been affected by illness or injury. **Anterograde amnesia** involves the inability to retain new memories. By contrast, **retrograde amnesia** involves losing memories from a period before the time that a person's brain was damaged.

Encoding and organisation oflong-term memory

- To be retrieved from memory, information must be **encoded**, or cast into a representational 'code' that can be readily accessed.
- **Mnemonic devices** are systematic strategies for remembering information.
- Knowledge stored in memory forms **networks of association** — clusters ofinterc information.
- LTM is organised in terms of schemas, organised knowledge structures or patterns of

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A visual overview of memory

Information processing

A memory is a mental representation for something to be remembered.

Sensory memory
• sensory
• verbal
• motoric

Response

Short-term memory (20–30 seconds)

Rehearsal

Long-term memory (enduring storage)

Retrieval

Working memory

Central executive

Phonological loop

Episodic buffer

Visuospatial sketchpad

Long-term knowledge systems

Long-term memory

Sensory memory

attention

Short-term working memory

encoding

retrieval

Long-term working memory

Explicit (conscious/declarative)

Episodic (events)

Semantic (facts)

Implicit (unconscious/non-declarative)

Procedural (skills)

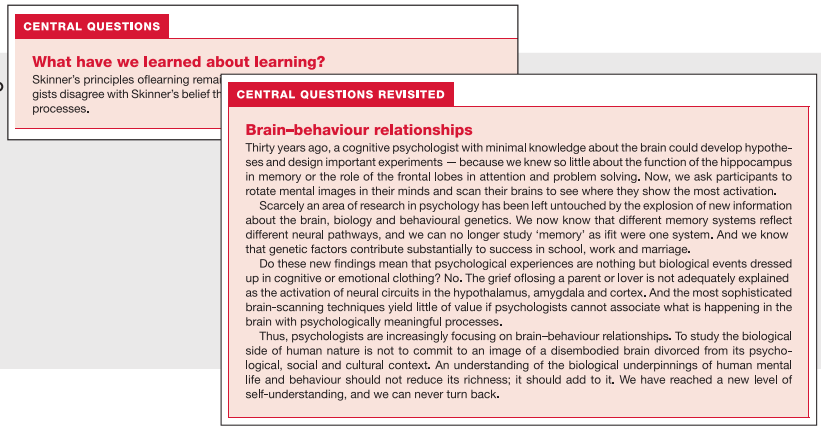
CENTRAL QUESTIONS

What is memory?

• The concept of memory is expanding and we are beginning to see an integration among the differing psychological perspectives.

CHAPTER 7 Memory 415

Central questions
A number of questions central to the chapter topic are posed at the beginning of each chapter. These questions are revisited at the end of each chapter.


CENTRAL QUESTIONS

What have we learned about learning?

Skinner's principles of learning rema
gists disagree with Skinner's belief th
processes.

CENTRAL QUESTIONS REVISITED

Brain–behaviour relationships

Thirty years ago, a cognitive psychologist with minimal knowledge about the brain could develop hypotheses and design important experiments — because we knew so little about the function of the hippocampus in memory or the role of the frontal lobes in attention and problem solving. Now, we ask participants to rotate mental images in their minds and scan their brains to see where they show the most activation.

Scarcely an area of research in psychology has been left untouched by the explosion of new information about the brain, biology and behavioural genetics. We now know that different memory systems reflect different neural pathways, and we can no longer study 'memory' as if it were one system. And we know that genetic factors contribute substantially to success in school, work and marriage.

Do these new findings mean that psychological experiences are nothing but biological events dressed up in cognitive or emotional clothing? No. The grief of losing a parent or lover is not adequately explained as the activation of neural circuits in the hypothalamus, amygdala and cortex. And the most sophisticated brain-scanning techniques yield little of value if psychologists cannot associate what is happening in the brain with psychologically meaningful processes.

Thus, psychologists are increasingly focusing on brain–behaviour relationships. To study the biological side of human nature is not to commit to an image of a disembodied brain divorced from its psychological, social and cultural context. An understanding of the biological underpinnings of human mental life and behaviour should not reduce its richness; it should add to it. We have reached a new level of self-understanding, and we can never turn back.

Commentary
Australian and New Zealand academics have provided expert commentary on one or two key issues covered in each chapter; often presenting both sides of the debate, or letting the reader know their personal opinions on an issue. They will often challenge you to extend your thinking as you consider the relevance of the topic to the Australian and Asia–Pacific region.

One step further
Another feature provided by Australian and New Zealand academics, One step further is an advanced discussion of an aspect of the topic being covered. It is intended for students who find the topic especially intriguing and want to learn more about it.


COMMENTARY

The consequences ofindependent locomotion

BY DR JENNY RICHMOND, UNIVERSITY OF NEW SOUTH WALES

INTERIM SUMMARY

ONE STEP FURTHER

Face your fear, and learn like a dancer

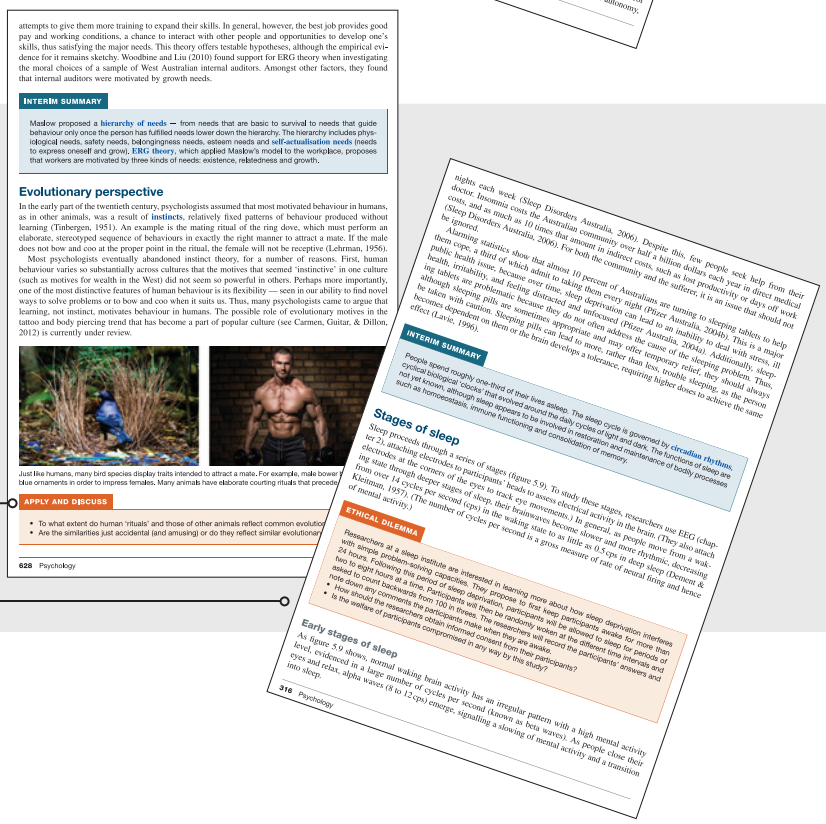
BY DR KENNETH I. MAYER, UNIVERSITY OF ST ANDREWS, UNITED KINGDOM

From brain to behaviour
From brain to behaviour focuses on concepts and findings from biopsychology and the neurosciences, providing a detailed discussion of a specific issue.

Making connections
Making connections illustrates and links material from different chapters so that you can see the threads that tie the psychology discipline together. Key concepts are highlighted in a different colour to help you better establish these links.

Apply and discuss
Apply and discuss combines visual imagery with questions to encourage higher order thinking, analysis and application of key concepts.

Ethical dilemma
In each chapter, an ethical dilemma is posed to help you better understand and apply the APS code of ethics.



Interim summary
At the end of major sections, interim summaries recap the 'gist' of what has been presented. The inclusion of these summaries reflects both feedback from lecturers and the results of research suggesting that distributing conceptual summaries throughout a chapter and presenting them shortly after students have read the material is likely to optimise learning.

INTERIM SUMMARY

Freud distinguished types of mental activities: **conscious** processes, of which the person is currently subjectively aware; **preconscious** processes, which are not presently conscious but could be readily brought to consciousness; and **unconscious** processes, which are dynamically kept from consciousness because they are threatening. Studies of **subliminal perception** have shown that perception of stimuli below the threshold of consciousness can indeed have an impact on conscious thought and behaviour. Recent research also supports the psychodynamic hypothesis that emotional and motivational processes can occur outside of awareness. Researchers from a cognitive perspective have been studying the **cognitive unconscious**, which focuses on information-processing mechanisms that operate outside of awareness, such as procedural knowledge and implicit memory. Implicit processes tend to be rapid and to operate simultaneously. Conscious processes are slower and less efficient for tasks that require instant responses but are useful for 'shining a spotlight' on problems that require more careful consideration.

Chapter summaries
Each chapter concludes with a summary of the major points, which are organised under the learning objectives introduced at the start of the chapter.

End-of-chapter review, discussion and application questions
Each chapter contains review, discussion and application questions to test not only knowledge and understanding, but also higher order thinking and analysis in relation to key concepts.

SUMMARY

8.1 Describe the various units of thought.

- **Thinking** means representing mental representations for a purpose. Much of the time people think using words, **mental images** (visual representations) and **mental models** (representations that describe, explain or predict the way things work).
- A **concept** is a mental representation of a category; that is, an internal portrait of a class of objects, ideas or events that share common properties. The process ofidentifying an object as an instance of a category — recognising its similarity to some objects and dissimilarity to others — is called **categorisation**. Concepts that have properties that clearly set them apart from other concepts are relatively **well defined**; many concepts, however, are not easily defined by a precise set of features.
- People typically classify objects rapidly by judging their similarity to concepts stored in memory. They often do this by comparing the observed object they are trying to classify with a **prototype**, an abstraction across many instances of a category, or a good example, called an exemplar. When people rapidly categorise, they probably rely heavily on prototype matching. Complex, deliberate classification tasks often require more explicit evaluation of the data, such as consulting lists of **defining features**.
- In categorising objects, people naturally tend to use the **basic level**, the broadest, most inclusive level at which objects share common attributes that are distinctive of the concept. The way people categorise is partially dependent on culture, expertise and their goals.

8.2 Distinguish between reasoning, problem solving and decision making.

- **Reasoning** refers to the process by which people generate and evaluate arguments and beliefs. **Inductive reasoning** means reasoning from specific observations to more general propositions that seem likely to be true. **Deductive reasoning** is logical reasoning that draws conclusions from premises and leads to certainty if the premises are correct. **Analogical reasoning** is the process by which people understand a novel situation in terms of a familiar one.
- **Problem solving** is the process of transforming one situation into another to meet a goal, by identifying discrepancies between the initial state and the goal state and using various operators to try to eliminate the discrepancies. **Problem-solving strategies** are techniques that serve as guides for solving a problem. One of the most important problem-solving strategies is **mental simulation** — imagining the steps involved in solving a problem mentally before actually undertaking them.
- **Decision making** is the process by which people weigh the pros and cons of different alternatives in order to make a choice. According to one information-processing model, a rational decision involves a combined assessment of the value and probability of different options, which provides an estimate of its **expected utility**.

8.3 Describe the role of explicit and implicit cognition in everyday thinking.

- Psychologists have begun to question whether the kind of rationality seen in **explicit cognition** (cognition that involves conscious manipulation of representations) models is always optimal. In everyday life, people make use of cognitive shortcuts, or **heuristics**, that allow them to make rapid judgements. Because people rarely have complete information and limitless time, they often practise **bounded rationality**, or rationality within limits imposed by the environment, their goals and so forth.
- Much of human behaviour reflects **implicit cognition**, or cognition outside of awareness. Research on implicit learning and implicit problem solving. Researchers are increasingly recognising the role of implicit motivation and emotion in everyday judgements, inferences and decisions.
- **Connectionist**, or **parallel distributed processing (PDP)**, models propose that many processes occur simultaneously (in parallel) and are spread (distributed) throughout a network of interacting neural processing units. Connectionist models differ from traditional information-processing models by limiting the importance of serial processing and shifting from the metaphor of the computer to mind as brain. These models suggest that perception, memory and thought

CHAPTER 8 Thought

psychodynamic perspective The perspective initiated by Sigmund Freud that focuses on the dynamic interplay of mental forces.
psychosocial needs Personal and interpersonal motives that lead people to strive for such ends as mastery, achievement, power, self-esteem, affiliation and intimacy with other people.
punishment A conditioning process that decreases the probability that a behaviour will occur.
relatedness Interpersonal motives for connectedness with other people; also called communion motives.
satiety mechanisms Processes that turn offingestive behaviour.
Schachter–Singer theory The theory that asserts that emotion involves cognitive interpretation of general physiological arousal.
secondary drive A motive learned through classical conditioning and other learning mechanisms such as modelling; also called acquired drive.
self-actualisation needs In Maslow's theory, the needs to express oneself, grow and actualise, or attain one's potential.
self-determination theory A theory of motivation that proposes that people have three innate needs — competence, autonomy and relatedness to others — and that intrinsic motivation flourishes when these needs are fulfilled rather than compromised.
set point The value of some variable that the body is trying to maintain, such as temperature.
sexual orientation The direction of a person's enduring sexual attraction to members of the same sex, the opposite sex or both.
sexual response cycle The pattern of physiological changes during sexual stimulation, consisting of four phases: excitement, plateau, orgasm and resolution.
Thematic Apperception Test (TAT) A projective test consisting of a series of ambiguous pictures about which participants are asked to make up a story.

REVIEW QUESTIONS

1 Distinguish among the following theories of motivation: instinct theory, drive-reduction theory, goal-setting theory and self-determination theory.
2 How is the hypothalamus involved in eating.
3 Describe Maslow's hierarchy of needs and explain the role of the hypothalamus in eating.
4 Describe the two phases of metabolism and explain the role of the hypothalamus in eating.
5 Define sexual orientation and outline the four phases of the sexual response cycle.
Describe the three components of emotion and outline the six facial expressions recognised by people of every culture.

DISCUSSION QUESTIONS

1 How is the experience of being overweight influenced by gender and culture?
2 Is sexual orientation dependent primarily on genetic or environmental factors?
3 Why can jealousy be a powerful source of motivation in both males and females?

APPLICATION QUESTIONS

1 Test your understanding of achievement motivation by identifying each of the following scenarios as an example of one of the following three components of achievement motivation: performance-approach goals, performance-avoidance goals and mastery goals.
(a) Neil is studying a foundation psychology course as part of his degree in general science. He submits all of the necessary assessment tasks by the due date and allows enough time to revise for the final exam. He hopes to receive at least a credit grade for the course.

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CHAPTER 1

Psychology: the study of mental processes and behaviour

LEARNING OUTCOMES

After studying this chapter, you should be able to:

- **1.1** define psychology
- **1.2** discuss the contributions of biopsychology
- **1.3** outline the history of psychology
- **1.4** distinguish among the major theoretical perspectives in psychology
- **1.5** discuss the educational requirements for psychologists and outline their most common work settings
- **1.6** understand how to study effectively.

CONCEPT MAP

Psychology: the study of mental processes and behaviour

Psychology

- **Psychology** is the scientific investigation of mental processes (thinking, remembering and feeling) and behaviour. Understanding a person requires attention to the individual's biology, psychological experience and cultural context.

The boundaries and borders of psychology

- **Biopsychology** examines the physical basis of psychological phenomena such as motivation, emotion and stress.
- **Cross-cultural psychology** tries to distinguish universal psychological processes from those that are specific to particular cultures.

History of psychology

Philosophical roots of psychological questions

- **Free will or determinism:** do we freely choose our actions or do things outside our control determine our behaviour?
- **Mind–body problem:** the question of how mental and physical events interact.

From philosophical speculation to scientific investigation

- Wilhelm Wundt founded the first psychological laboratory in 1879.
- Two prominent early schools of thought were **structuralism** (uncover the basic elements of consciousness through **introspection**) and **functionalism** (explain psychological processes in terms of the role, or function, they serve).
- Edward Titchener initiated the school of thought known as structuralism; William James was one of the founders of functionalism.

Psychology in Australia and New Zealand

Education and training to become a psychologist

- Currently, a registered psychologist in Australia has completed a minimum of six years study in an APS-accredited psychology program. To practise as a psychologist in Australia, there is a legal requirement that you be registered with the Australian Health Practitioner Regulation Agency, which works in conjunction with the Psychology Board of Australia to provide a single registration scheme enabling registered psychologists to practise anywhere in Australia.
- In New Zealand, psychologists working in the public sector must be registered with the New Zealand Psychologists Board, which also involves a period of supervision on top of university training.

Professional associations for psychologists

- Both Australia and New Zealand also have peak bodies that represent the profession and its members — the Australian Psychological Society (APS), established in 1966, and the New Zealand Psychological Society (NZPsS), established in 1967.

Major subdisciplines in psychology

- Within the broad discipline of psychology there are many fields of specialisation, including developmental, social, clinical, cognitive, health, forensic and sport psychology, among others.

- Positive psychology is emerging as a new field of psychology that takes a strengths-based approach to helping people maintain an optimal state of mental health and wellbeing.
- Different psychologists adopt different perspectives in their approach to the study of human behaviour.

How to study effectively

- Managing your time effectively is extremely important if you are to be successful in your studies. Set up a weekly schedule filled with specific study tasks (e.g., lectures, tutorials, assignments and exams) to help you stay on track with your studies.
- It is important that you learn how to get the most out of your study by becoming an active learner. Effectively preparing for the final exam involves setting up a revision timetable and applying a systematic approach to answering questions in an exam.

Careers in psychology

- There are a wide range of career options available to psychologists. Psychologists may work in private practice. They may also gain employment in many other government and private sector organisations.
- There is a predicted strong employment growth within the next five years.

Perspectives in psychology

The psychodynamic perspective

- The **psychodynamic perspective** relies on several key premises.
  1. People's actions are determined by the way thoughts, feelings and wishes are connected in their minds.
  2. Many of these mental events occur outside conscious awareness.
  3. These mental processes may conflict with one another, leading to compromises among competing motives.
  4. Sigmund Freud emphasised unconscious mental forces in his psychoanalytic theory.
  5. According to psychoanalytic theory, many of the associations between feelings and behaviours or situations that guide our behaviour are expressed unconsciously.

The humanistic perspective

- The **humanistic perspective** focuses on the uniqueness of the individual — it assumes that people are motivated to become **self-actualised** (reach their full potential).
- Carl Rogers' client-centred therapy emphasised conscious, goal-directed choices and the need for individuals to realise their true potential — to self-actualise.

The behaviourist perspective

- The **behaviourist perspective** focuses on the way objects or events in the environment come to control behaviour through learning.
- B. F. Skinner observed that behaviour can be controlled by environmental consequences that either increase (reinforce) or decrease (punish) their likelihood of occurring.

The cognitive perspective

- The **cognitive perspective** focuses on the way people perceive, process and retrieve information.
- René Descartes' early philosophical questions led many cognitive psychologists to emphasise the role of reason in creating knowledge.
- Modern-day cognitive psychologists use experimental procedures to infer the underlying mental processes in operation.

The evolutionary perspective

- The **evolutionary perspective** argues that many behavioural tendencies in humans, from the need to eat to concern for our children, evolved because they helped our ancestors survive and rear healthy offspring.
- Evolutionary psychologists support Charles Darwin's theory of natural selection — the most adaptive behavioural traits are those that helped our ancestors adjust and survive in their environment.

CENTRAL QUESTIONS

Facts, theories and perspectives in psychology

- The way psychologists and other scientists understand any phenomenon depends on their interpretation of the whole — on their perspectives.
- Although the different perspectives offer radically different ways of approaching psychology, each has made distinctive contributions.

OPENING CASE

If anyone could be forgiven for lapsing into melancholy, it was Connie Johnson. The Canberra mother-of-two was diagnosed with terminal breast cancer in 2010 at the age of just 33. She was given just six months to live. But that wasn't her first brush with cancer — she had three years of treatment for bone cancer when she was just 11 years old, and was also treated for a tumour in her womb when she was just 22. You could say Connie had more than her share of tough times.

Siblings Samuel and Connie Johnson, founders of Love Your Sister

Connie survived past that initial six-month window, thanks to chemotherapy and other treatment. However, in April 2017, after fighting her breast cancer for seven years, Connie announced that she was halting all further treatment and would let the disease take its course. Connie died on 8 September 2017.

Connie's story is heartbreaking in many ways, yet it is also uplifting. That's because Connie Johnson did not despair about her lot in life. Instead, she stayed positive and decided to use her time for the greater good. With her actor-brother, Samuel Johnson, she co-founded the charity Love Your Sister to raise money to help vanquish cancer. In Connie's typical positive style, she dared her brother to ride around Australia on a unicycle to raise money and to remind women to check their breasts. Samuel rode the unicycle for 364 days around Australia — raising $1.6 million in the process. After starring in the mini-series *Molly*, for which he won the 2017 Gold Logie, Samuel Johnson announced he was retiring from acting to devote his energies to Love Your Sister.

Since being founded, Love Your Sister has found many strange and wonderful ways to raise breast cancer awareness — and cash. By 2017, that fundraising tally had reached more than $7 million.

Connie remained realistic but positive all the way through her breast cancer fight. Her followers would tell her they were praying for a miracle cure. She replied to one in typically positive fashion:

> When I got diagnosed as terminal all I wanted and hoped for was to live long enough that my boys would remember their mum. I got that, they know me, know how much I love them and will always remember their Mum. I definitely got my miracle! (news.com.au, 2017)

The Love Your Sister Facebook page (www.facebook.com/loveyoursister) has gone viral and inspired people all over the world to donate to the cause. Connie's story is relevant to the study of psychology, because it highlights the importance of taking a strengths-based approach to psychology.

CENTRAL QUESTIONS

- How does our theoretical perspective influence the way we interpret the world?
- Can we dispense with theory and simply look at the facts?

1.1 Psychology and positive psychology

LEARNING OUTCOME 1.1 Define psychology.

For much of its history, psychology has focused on the darker side of human nature — mental illness rather than mental health, pathology rather than subjective wellbeing (Lopez, 2009; Seligman & Csikszentmihalyi, 2000). Psychology has tended to view people as deficient rather than as humans possessing remarkable character strengths that allow them to persevere and flourish. Many people view the practice of psychology through the prism of abnormality — as a science that is only used to 'fix' someone who is suffering from a mental illness or disorder of some kind. But over the last decade or more, a new subdiscipline of psychology has emerged that views the practice through a different prism, in what has become known as the **positive psychology** approach. This subdiscipline does not view psychology as something only to be used to treat a problem. Rather, it is a proactive approach to help people live happier, more fulfilling and joyful lives. The focus is on understanding and harnessing positive emotions, and actively stimulating the conditions that help people flourish. Positive psychology focuses on understanding the factors and processes that underpin a worthwhile life (APS, 2017a). The positive psychology movement looks at topics such as hope, optimism, creativity, forgiveness, gratitude, wisdom, happiness, self-determination, wellbeing, and resilience, to name a few. As summarised by Martin Seligman and Mihaly Csikszentmihalyi (2000), two of the leaders of the positive psychology movement:

> The field of positive psychology at the subjective level is about valued subjective experiences: well-being, contentment, and satisfaction (in the past); hope and optimism (for the future); and flow and happiness (in the present). At the individual level, it is about positive individual traits; the capacity for love and vocation, courage, interpersonal skill, aesthetic sensibility, perseverance, forgiveness, originality, future mindedness, spirituality, high talent, and wisdom. At the group level, it is about the civic virtues and the institutions that move individuals toward better citizenship: responsibility, nurturance, altruism, civility, moderation, tolerance, and work ethic (p. 5).

The story of Connie Johnson is a perfect example of positive psychology in action — both Connie and Samuel directed their energy at creating a positive difference, not just focusing on an illness or problem needing treatment.

Psychology seeks to answer questions about why we do the things we do. In trying to understand why things happen, we must be cautious not to be too quick in looking for a single cause of behaviour or a particular trigger event. Humans are complex creatures whose psychological experience lies at the intersection of biology and culture. To paraphrase theorist Erik Erikson (1963), psychologists must practise 'triple bookkeeping' to understand an individual at any given time, simultaneously tracking biological events, psychological experience, and the cultural and historical context.

Psychology lies at the intersection of biology and culture. **Psychology** is the scientific investigation of mental processes (thinking, remembering and feeling) and behaviour. All psychological processes occur through the interaction of cells in the nervous system, and all human action occurs in the context of cultural beliefs and values that render it meaningful. Psychological understanding requires a constant movement between the micro-level of biology and the macro-level of culture.

This chapter begins by exploring the biological and cultural boundaries and borders that frame human psychology. We then examine the theoretical perspectives that have focused, and often divided, the attention of the scientific community for more than a century. The chapter closes by looking at psychology as a discipline in the twenty-first century. We will examine the major subdisciplines in psychology and consider the various career options for psychology graduates in Australia and New Zealand. Importantly, we introduce the issue of 'how to study effectively', to help put you on the pathway to success with your psychology studies.

INTERIM SUMMARY

Psychology is the scientific investigation of mental processes (thinking, remembering and feeling) and behaviour. Understanding a person requires attention to the individual's biology, psychological experience and cultural context. **Positive psychology** focuses on understanding and harnessing positive emotions and actively stimulating conditions that produce valued, subjective experiences that help people flourish.

1.2 The boundaries and borders of psychology

LEARNING OUTCOME 1.2 Discuss the contributions of biopsychology.

Biology and culture establish both the possibilities and the constraints within which people think, feel and act. On the one hand, the structure of the brain sets the parameters, or limits, of human potential. Most 10-year-olds cannot solve algebra problems because the neural circuitry essential for abstract thought has not yet matured. Similarly, the capacity for love has its roots in the innate tendency of infants to develop an emotional attachment to their caretakers. These are biological givens.

On the other hand, most adults throughout human history would find algebra problems as mystifying as would a preschooler because their culture never provided the groundwork for this kind of reasoning. And though love may be a basic potential, the way people love depends on the values, beliefs and practices of their society. In some cultures, people seek and expect romance in their marriages, whereas in others, they do not select a spouse based on affection or attraction at all. The study of psychological phenomena in other cultures by observing people in their natural settings is undertaken by **psychological anthropologists**; and **cross-cultural psychology** involves testing psychological hypotheses in different cultures.

FROM BRAIN TO BEHAVIOUR

The boundary with biology

The biological boundary of psychology is the province of **biopsychology** (or **behavioural neuroscience**), which investigates the physical basis of psychological phenomena such as memory, emotion and stress. Instead of studying thoughts, feelings or fears, behavioural neuroscientists (some of whom are doctors or biologists rather than psychologists) investigate the electrical and chemical processes in the nervous system that underlie these mental events. Their aim is to link mind and body, psyche and brain.

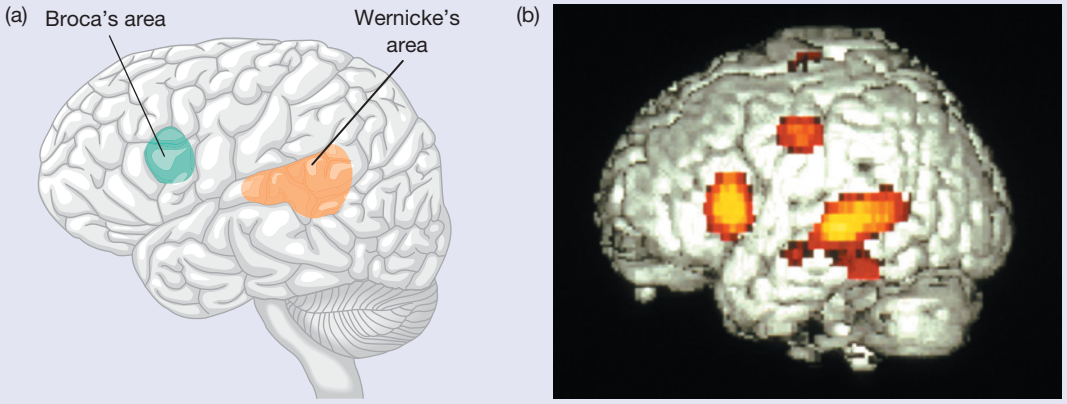
The connection between brain and behaviour became increasingly clear during the nineteenth century, when doctors began observing patients with severe head injuries. These patients often showed deficits in language and memory, or dramatic changes in their personality. For example, following a severe blow to the head, a genteel, socially adept businessman and devoted father could suddenly become lewd, cantankerous and unable to care about the people he had loved just days earlier.

Such observations led researchers to experiment by *producing* lesions surgically in animals in different neural regions to observe the effects on behaviour. This method is still used in contemporary science, as in research on emotion (Rudebeck, Saunders, Prescott, Chau, & Murray, 2013; Shiba, Kim, Santangelo, & Roberts, 2014). Agustín-Pavón et al. (2012) created lesions in brain structures hypothesised to be involved when primates learned to fear aversive stimuli. When a lesion altered the emotional display of the primates, the researchers knew that the damaged area was involved in producing fear and anxiety.

In fact, since its origins in the nineteenth century, one of the major issues in behavioural neuroscience has been **localisation of function**, or the extent to which different parts of the brain control different aspects of functioning. In 1836, a doctor named Marc Dax presented a paper suggesting that lesions on the left side of the brain were associated with aphasia, or language disorders. The notion that language was localised to the left side of the brain (the left hemisphere) developed momentum, with new discoveries linking specific language functions to specific regions of the left hemisphere. Paul Broca (1824–1880) discovered that brain-injured people with lesions in the front section of the left hemisphere were often unable to speak fluently but could comprehend language. Carl Wernicke (1848–1904) showed that damage

to an area a few centimetres behind the section Broca had discovered could lead to another kind of aphasia. These individuals can speak fluently and follow rules of grammar, but they can neither understand language nor speak in a way that is comprehensible to others (figure 1.1). Individuals with this form of aphasia might speak fluently, apparently following rules of grammar, but their words make little sense (e.g., 'I saw the bats and cuticles as the dog lifted the hoof, the pauser.').

FIGURE 1.1 Broca's and Wernicke's areas. (a) Broca's aphasia involves difficulty producing speech, whereas Wernicke's aphasia typically involves difficulty comprehending language. (b) Positron emission tomography (PET) is a computerised imaging technique that allows researchers to study the functioning of the brain as the person responds to stimuli. The PET scan here shows activity in Wernicke's area (right), Broca's area (left) and a motor region producing speech, during an exercise in which the participant was asked to repeat words.



Contemporary neuroscientists no longer believe that complex psychological functions 'happen' exclusively in a single localised part of the brain. Rather, the circuits for psychological events, such as emotions or thoughts, are distributed throughout the brain, with each part contributing to the total experience. A man who sustains lesions to one area may be unable consciously to distinguish his wife's face from the face of any other woman — a disabling condition indeed — but may react physiologically to her face with a higher heart rate or pulse (Bruyer, 1991). Technological advances over the last two decades have allowed researchers to pinpoint lesions precisely, and even to watch computerised portraits of the brain light up with activity (or fail to light up, in cases of neural damage) as people perform psychological tasks (chapter 3). In large part, as a result of these technological advances, psychology has become increasingly biological over the last decade, as behavioural neuroscience has extended into virtually all areas of psychology.

MAKING CONNECTIONS

Patients with damage to circuits in the brain linking thoughts with feelings may 'know' something is risky but do it anyway. They cannot seem to connect actions with their emotional consequences (chapters 3 and 10).

INTERIM SUMMARY

Biopsychology (or **behavioural neuroscience**) examines the physical basis of psychological phenomena such as motivation, emotion and stress. Although different neural regions perform different functions, the neural circuits that underlie psychological events are distributed throughout the brain and cannot be 'found' in one location. At another boundary of psychology, cross-cultural investigation tries to distinguish universal psychological processes from those that are specific to particular cultures.

1.3 History of psychology

LEARNING OUTCOME 1.3 Outline the history of psychology.

Questions about human nature, such as whether psychological attributes are the same everywhere, were once the province of philosophy. Early in the twentieth century, however, philosophers entered a period of intense self-doubt, wrestling with the limitations of what they could know about topics such as morality, justice and the nature of knowledge. At the same time, psychologists began to apply the methods and technologies of natural science to psychological questions. They reasoned that if physicists could discover the atom and industrialists could mass produce cars, psychological scientists could uncover basic laws of human and animal behaviour.

Philosophical roots of psychological questions

The fact that psychology grew out of philosophy is important. Many issues at the heart of contemporary psychological research and controversy are classic philosophical questions. One of these is whether human action is the product of **free will** or **determinism**; that is, do we freely choose our actions or is our behaviour caused — determined — by things outside our control?

Champions of free will follow in the footsteps of seventeenth-century French philosopher René Descartes (1596–1650), who contended that human action follows from human intention — that people choose a course of action and act on it. Proponents of determinism, from the Greek philosopher Democritus onwards, assert that behaviour follows lawful patterns like everything else in the universe, from falling rocks to orbiting planets. Psychological determinists believe that physical forces determine the actions of humans and other animals — internally by genetic processes and externally by environmental events.

Philosopher René Descartes contended human action follows on from human intention; that is, people choose a course of action and act on it.

This debate has no easy resolution. Subjectively, we have the experience of free will. We could choose to stop writing — or you to stop reading — right now. Yet here we are, continuing into the next sentence. Why? What determined our decision to forge ahead? And how can mental processes exercise control over physical processes such as moving a pen or turning a page?

Humans are part of nature, like birds, plants and water. When we choose to move, our limbs exert a force that counters gravity and disturbs molecules of air. How can a non-material force — will — displace material forces? No-one has ever proposed a satisfactory solution to the **mind–body problem**, the question of how mental and physical events interact. However, psychological phenomena put the mind–body problem in a new light by drawing attention to the way psychological meaning can be transformed into mechanism (physiological events).

Psychologists do not tackle philosophical issues such as free will directly, but classic philosophical questions reverberate through many contemporary psychological discussions. Research into the genetics of personality and personality disturbances provides an intriguing, if disquieting, example. People with antisocial personality disorder have minimal conscience and a tendency towards aggressive or criminal

behaviour. In an initial psychiatric evaluation one man boasted that he had terrorised his former girlfriend for an hour by brandishing a knife and telling her in exquisite detail the ways he intended to slice her flesh. This man could undoubtedly have exercised his free will to continue or discontinue his behaviour at any moment and hence was morally (and legally) responsible for his acts. He knew what he was doing, he was not hearing voices commanding him to behave aggressively and he thoroughly enjoyed his victim's terror. A determinist, however, could offer an equally compelling case. Like many violent men, he was the son of violent, alcoholic parents who had beaten him severely as a child. Both physical abuse in childhood and parental alcoholism (which can exert both genetic and environmental influences) render an individual more likely to develop antisocial personality disorder (see Blair, Peschardt, Budhani, Mitchell, & Pine, 2006; Martens, 2000; Shi, Bureau, Easterbrooks, Zhao, & Lyons-Ruth, 2012). In the immediate moment, perhaps, he had free will, but over the long run, he may have had no choice but to be the person he was.

APPLY AND DISCUSS

In 1996, Martin Bryant shot dead 35 people at Port Arthur in Tasmania. Mental health professionals who evaluated Bryant testified that he was of limited intellectual ability, had severe developmental problems and suffered a significant personality disorder. In 2012, James Holmes shot dead 12 people and wounded 58 others at the midnight screening of the new *Batman* film at a cinema in Colorado in the United States. He was described variously as intellectually gifted and socially isolated in media reports at the time. He won a university scholarship to complete his undergraduate degree in neuroscience, although was withdrawing from his doctoral studies when he undertook the attack. A psychiatrist who had recently treated him had reported to police that he was dangerous approximately one month prior to the attacks.

- Were Bryant and Holmes responsible for their actions?
- Was one any less responsible than the other?
- Was either more responsible than a person who has a heart attack while driving and consequently kills a pedestrian? If so, why?

Other philosophical questions frame contemporary psychological theory and research. Many, such as free will versus determinism, take the apparent form of choices between polar opposites, neither of which can be entirely true. Does human behaviour reflect nature (biology) or nurture (environmental influence)? Does knowledge come from observing the world or from thinking about it? Several of these fundamental questions are summarised in table 1.1.

TABLE 1.1 Philosophical issues and psychological questions

Philosophical issue	Examples of contemporary psychological questions
Free will versus determinism: Do people make free choices or do forces outside their control determine their actions?	What causes patients with antisocial personality disorder to produce criminal behaviour?
Nature versus nurture: To what extent do psychological processes reflect biological or environmental influences?	To what extent is intelligence inherited, and how do genes and environment interact to influence intellectual functioning?
Rationalism versus empiricism: To what extent does knowledge about the world come from observation and experience or from logic and reasoning?	How do children come to understand that other people have thoughts and feelings?
Reason versus emotion: To what extent are people guided by their knowledge or by their feelings (and to what extent should they be)?	Should people choose their mates based on 'gut' feelings, or should they carefully weigh a potential partner's costs and benefits if they want to have a happy, long-lasting marriage?

(continued)