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.

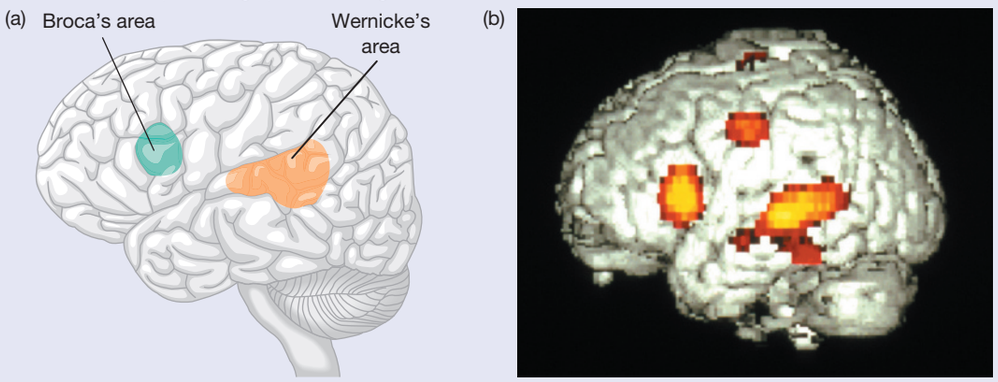
The connection between brain and behaviour became increasingly clear during the nineteenth century, when doctors began observing patients with severe head injuries. These patients often showed deficits in language and memory, or dramatic changes in their personality. For example, following a severe blow 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

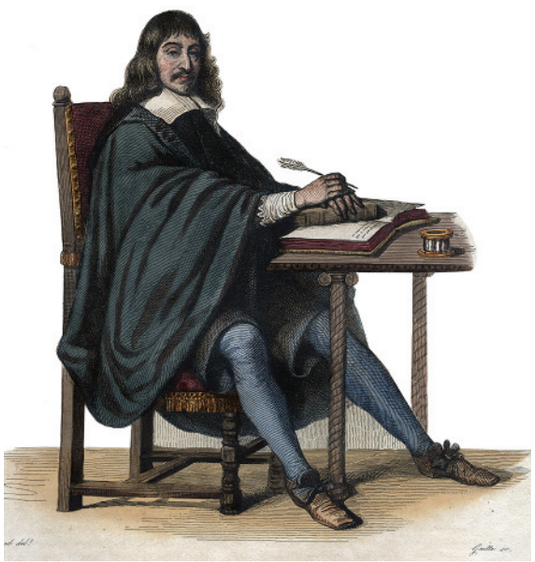
LEARNING OUTCOME 1.3 Outline the history of psychology.

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)

TABLE 1.1 *(continued)*

Philosophical issue	Examples of contemporary psychological questions
Continuity versus discontinuity with other animals: To what extent are humans similar to other animals (that is, to what extent is human psychology continuous with the psychology of other animals)?	To what degree can studying fear responses in primates inform psychologists about the nature of human emotions?
Individualism versus relationality: To what extent are humans fundamentally self-interested or oriented towards relating to and helping other people?	Do people ever really help others without any benefit to themselves or are they motivated by other considerations, such as desires to feel good about themselves or avoid guilt?
Conscious versus unconscious: To what extent are people conscious of the contents of their mind and the causes of their behaviour?	Can people describe themselves accurately or are they unaware of many aspects of their personality?
Mental versus physical: To what extent can we understand psychological events independent of their neural basis?	How many kinds of memory are there? When we hold a phone number in mind briefly as we reach for the phone, are we using different neural 'hardware' than when we store that number 'for keeps'?

From philosophical speculation to scientific investigation

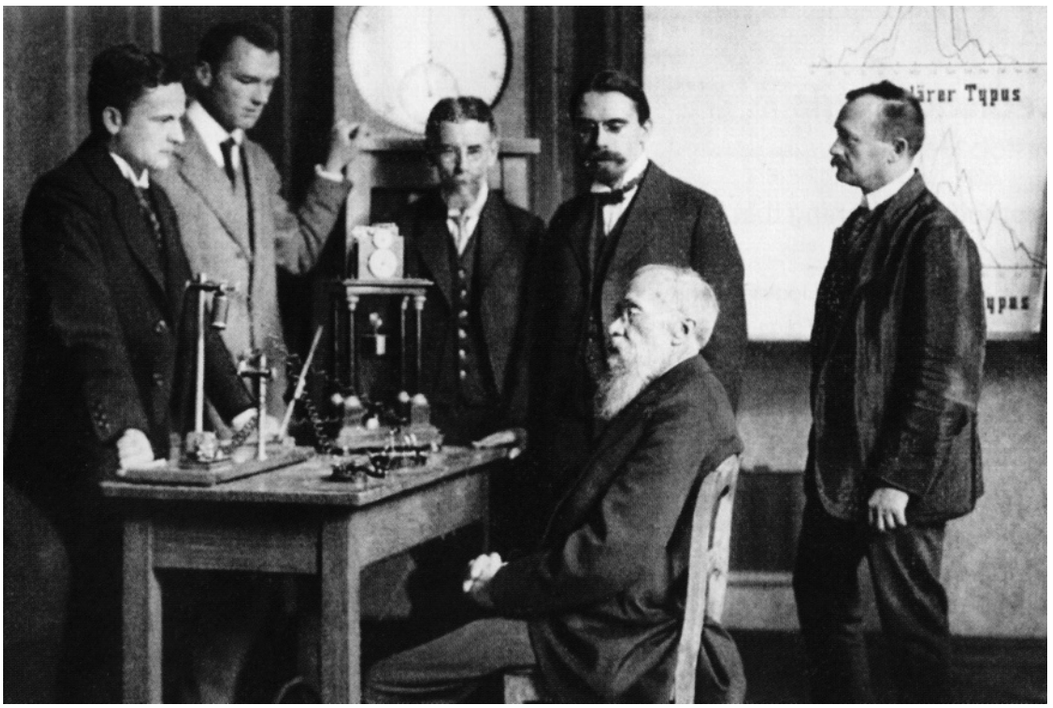
Philosophical questions have been around throughout human history — they were once the province of religion and, later, philosophy. They have survived because they allow people to better understand themselves.

Philosophical arguments have set the agenda for many issues confronting psychologists. The emergence of psychology as a science has provided a new means for answering these long-asked questions. Its roots in philosophy, however, have profoundly influenced the discipline. Philosophers searched for answers to questions about the nature of thought, feeling and behaviour in their minds, using logic and argumentation. By the late nineteenth century an alternative approach emerged: to understand the mind and behaviour, we should investigate it scientifically, just as physicists study the nature of light or gravity through systematic observation and experimentation. Thus, in 1879, Wilhelm Wundt (1832–1920), often described as the 'father of psychology', founded the first psychological laboratory in Leipzig, Germany.

Wundt's scientific psychology

Wundt hoped to use scientific methods to uncover the elementary units of human consciousness that combine to form more complex ideas, much as atoms combine into molecules in chemistry. Foremost among his methods was **introspection**, the process of looking inward and reporting on one's conscious experience. This introspection, however, was nothing like the introspection of philosophers, who speculated freely on their experiences and observations. Instead, Wundt trained observers to report verbally everything that went through their minds when presented with a stimulus or task. By varying the objects presented, he concluded that the basic elements of consciousness are sensations (such as colours) and feelings. These elements combine into more meaningful perceptions (such as of a face or a cat), which can be combined into still *more* complex ideas by focusing attention on them and mentally manipulating them.

Wundt never identified experimentation as the *only* route to psychological knowledge. He considered it essential for studying the basic elements of the mind, but other methods — such as the study of myths, religion and language in various cultures — were essential for understanding higher mental processes. The next generation of experimental psychologists took a different view, motivated by their wish to divorce themselves from philosophical speculation and establish a fully scientific psychology.



Wilhelm Wundt (seated) is often called the father of psychology for his pioneering laboratory research.

Structuralism and functionalism

Wundt's student, Edward Titchener (1867–1927), advocated using introspection in experiments with the hope of devising a periodic table of the elements of human consciousness, much like the periodic table developed by chemists. Because of this interest in the structure of consciousness, the school of thought Titchener initiated was known as **structuralism**. Unlike Wundt, Titchener believed that experimentation was the only appropriate method for a science of psychology and that concepts such as 'attention' implied too much free will to be scientifically useful. The generation of experimental psychologists who followed Titchener went even further, viewing the study of consciousness itself as unscientific because the data — sensations and feelings — could not be observed by anyone except the person reporting them.

Structuralism was one of two schools of thought that dominated psychology in its earliest years. The other was functionalism. Instead of focusing on the contents of the mind, **functionalism** emphasised the role — or function — of psychological processes in helping individuals adapt to their environment. Functionalists would not be content with the idea that running comes into consciousness in the presence of a snake raising its head to strike. They would advocate that it is no accident that this particular idea enters consciousness when a person sees a snake but not when they see a flower.

A founder of functionalism, Harvard psychologist William James (1842–1910) penned the first textbook in psychology in 1890. (If you think *this* one is long, try reading James's 1400-page, two-volume set.) James believed that knowledge about human psychology could come from many sources, including introspection and experimentation but also the study of children, other animals (whose introspective reports may not be very useful) and people whose minds do *not* function adequately (such as the mentally ill). James thought the structuralists' efforts to catalogue the elements of consciousness were not only misguided but profoundly boring! Consciousness exists because it serves a function, and the task of the psychologist is to understand that function. James was interested in explaining, not simply describing,

the mind's contents. As we will see, functionalism bore the imprint of Charles Darwin's evolutionary theory, which has again come to play a central role in psychological thought a century later.

Structuralism and functionalism were two early 'camps' in psychology that attracted passionate advocates and opponents. But they were not the last.

INTERIM SUMMARY

Although many contemporary psychological questions derive from age-old philosophical questions, by the end of the nineteenth century psychology emerged as a discipline that aimed to answer questions about human nature through scientific investigation. Two prominent early schools of thought were **structuralism** and **functionalism**. Structuralism attempted to uncover the basic elements of consciousness through **introspection**. Functionalism attempted to explain psychological processes in terms of the role, or function, they serve.

1.4 Perspectives in psychology

LEARNING OUTCOME 1.4 Distinguish among the major theoretical perspectives in psychology.

Philosopher Thomas Kuhn studied the history of science and found some remarkable convergences in the way schools of thought come and go and knowledge is generated. Kuhn (1970) observed that science does not progress, as many believe, primarily by accumulating 'facts'. Rather, science progresses as much, or more, by developing better and better paradigms.

A **paradigm** is a broad system of theoretical assumptions that a scientific community uses to make sense of its domain of study. A paradigm has several components. First, it includes a set of theoretical assertions that provide a model, or an abstract picture, of the object of study. Chemists, for example, have models of the way atoms combine to form molecules — something the structuralists hoped to emulate, by identifying basic 'elements' of consciousness and how they combined into thoughts and perceptions. Second, a paradigm includes a set of shared metaphors that compare the subject to something else that is readily apprehended (such as 'the mind is like a computer'). Third, a paradigm includes a set of methods that scientists agree will produce valid and useful data. Astronomers, for example, agree that telescopic investigation provides a window to events in space.

According to Kuhn, the social sciences and psychology differ from the older natural sciences (such as physics and biology) because they lack an accepted paradigm upon which most members of the scientific community agree. Instead, he proposes, these young sciences are still splintered into several schools of thought, or what we will call **perspectives**.

In this chapter and throughout the text, we examine five perspectives that guide current psychological thinking, offering sometimes competing and sometimes complementary points of view. These perspectives offer the same kind of broad, orienting approach as a scientific paradigm, and they share its three essential features. Focusing on these perspectives does not mean that other less comprehensive approaches have not contributed to psychological knowledge, or that nothing can be studied without them. A researcher interested in a specific question — such as the controversial debate about whether same-sex parenting affects children in a different way to heterosexual parenting (Biblarz & Stacey, 2010; Meezan & Rauch, 2005; Tasker, 2010) — does not need to employ a broader outlook. But perspectives generally guide psychological investigations and therapeutic interventions.

APPLY AND DISCUSS

- To what extent has integration between the different theoretical perspectives occurred?
- What are the main benefits of an approach that accepts many behaviourist principles but also emphasises the role of thought processes in learning?

In the following sections we examine the psychodynamic, behaviourist, humanistic, cognitive and evolutionary perspectives. In many respects, these perspectives have evolved independently, and at the centre of each are phenomena the others tend to ignore.

INTERIM SUMMARY

A **paradigm** is a broad system of theoretical assumptions employed by a scientific community that includes a distinct set of concepts or thought patterns, and shared metaphors and research methods. Psychology lacks a unified paradigm but has a number of schools of thought, or **perspectives**, that can be used to understand psychological events.

The psychodynamic perspective

A friend has been going out with a man for five months and has even jokingly tossed around the idea of marriage. Suddenly, her boyfriend tells her he has found someone else. She is shocked and cries uncontrollably but a day later declares that 'he didn't mean that much to me anyway'. When you console her about the rejection she must be feeling, she says, 'Rejection? Hey, I don't know why I put up with him for as long as I did', and jokes that 'bad character is a genetic abnormality carried on the Y chromosome' (more on that later). You know she really cared about him, and you conclude that she is being defensive — that she really feels rejected. You draw these conclusions because you have grown up in a culture influenced by the psychoanalytic theory of Sigmund Freud.

The Couch! Sigmund Freud's signature therapy procedure was to have patients lie on a couch and say whatever came to mind, while he took notes behind them. The couch is now in the Freud Museum in London.

In the late nineteenth century, Sigmund Freud (1856–1939), a Viennese physician, developed a theory of mental life and behaviour and an approach to treating psychological disorders known as psychoanalysis. Since then, many psychologists have continued Freud's emphasis on **psychodynamics**, or the dynamic interplay of mental forces. The **psychodynamic perspective** rests on three key premises. First, people's actions are determined by the way thoughts, feelings and wishes are connected in their minds. Second, many of these mental events occur outside of conscious awareness. And third, these mental processes may conflict with one another, leading to compromises among competing motives. Thus, people are unlikely to know precisely the chain of psychological events that leads to their conscious thoughts, intentions, feelings or behaviours.

As we will see, Freud and many of his followers failed to take seriously the importance of using scientific methods to test and refine their hypotheses. As a result, many psychodynamic concepts, such as ideas about unconscious processes, remained outside the mainstream of psychology until contemporary researchers brought them into the laboratory (Bargh & Morsella, 2008; Westen, 1998; Wilson, Lindsey, & Schooler, 2000). In this text, we will emphasise those aspects of psychodynamic thinking for which the scientific evidence is strongest. You should recognise that researchers often interchange the terms psychoanalytic and psychodynamic, and psychologists in practice should consider the effectiveness of psychodynamic psychotherapies (Gaskin, 2014).

Origins of the psychodynamic perspective

Freud originated his theory in response to patients whose symptoms, although real, were not based on physiological malfunctioning. At the time, scientific thinking could not explain patients who were preoccupied with irrational guilt after the death of a parent or were so paralysed with fear that they could not leave their homes. Freud made a deceptively simple deduction that changed the face of intellectual history: if the symptoms were not consciously created and maintained, and had no physical basis, only one possibility remained — their basis must be unconscious.

Freud argued that just as people have conscious motives or wishes, they also have powerful unconscious motives that underlie their intentions. Many of us have had the infuriating experience of being stuck in a traffic jam on a highway, only to find that nothing was blocking the road — just an accident in the opposite lane. Why do people slow down to gawk at accidents on the highway? Are they concerned? Perhaps. Freud would suggest that people feel an unconscious excitement, or at least satisfy a morbid curiosity, from viewing a gruesome scene, even though they may deny such socially unacceptable feelings.

Many have likened the relationship between conscious awareness and unconscious mental forces to the visible tip of an iceberg and the vast bulk that lies out of sight beneath the water. For example, an economics student went to see a psychologist because of a pattern of failing to hand in assignments. She would spend hours researching, write two-thirds of the assignment, and then suddenly find herself unable to finish. She was perplexed by her own behaviour because she consciously wanted to succeed.

So what lay beneath the surface? The patient came from a very traditional working-class family that expected girls to get married, not to develop a career. She had always outshone her brothers in school but hid her successes because of the discomfort this caused in the family. When she showed her report card, her mother would glance anxiously around to make sure her brothers did not see it. Eventually she learned to keep her grades to herself.

Years later, succeeding in a largely male course put her back in a familiar position, although she had not realised the link. The closer she came to success, the more difficulty she had finishing her assignments. She was caught in a conflict between her conscious desire to succeed and her unconscious association of discomfort with success. Research confirms that most psychological processes occur outside of awareness and that many of the associations between feelings and behaviours or situations that guide our behaviour are expressed implicitly or unconsciously (Combs, Krippner, & Taylor, 2010; Westen, 1998).

APPLY AND DISCUSS

Experimental research finds that homophobic men — men who report particularly negative attitudes towards homosexuality — show more sexual arousal when viewing photos of homosexual intercourse than do their less homophobic peers (Adams, Wright, & Lohr, 1996).

- How might a psychodynamic psychologist explain this?

Methods and data of the psychodynamic perspective

The methods psychodynamic psychologists use flow from their aims. Psychodynamic understanding seeks to interpret meanings — to infer underlying wishes, fears and patterns of thought from an individual's conscious, verbalised thought and behaviour. Accordingly, a psychodynamic clinician observes a patient's dreams, fantasies, posture and subtle behaviour towards the therapist. The psychodynamic perspective thus relies substantially on the case study method, which entails in-depth observation of a small number of people (chapter 2).

The most important legacy of the psychodynamic perspective is its emphasis on unconscious processes. The data of psychoanalysis can be thoughts, feelings and actions that occur anywhere, from a CEO jockeying for power in a corporate boardroom to a young child biting his brother for refusing to share a toy. Using any and all forms of information about a person reflects the psychodynamic assumption that people reveal themselves in everything they do (which is why psychoanalysts may not always be welcome at dinner parties).

According to Westen (1999, p. 1062), Freud contributed the following key propositions to psychoanalytic theory.

1. Enduring aspects of personality begin to emerge in childhood, and childhood experiences play an important role in personality development, shaping the ways people form later social relationships.
2. Mental representations of self, others, and relationships guide people's interactions with others and play a substantial part in many forms of psychopathology.
3. Mental processes, including affective and motivational processes, operate simultaneously and in parallel, so that individuals can have conflicting feelings toward the same person or situation and can craft compromises outside of awareness.
4. Personality development involves not only learning to regulate sexual and aggressive feelings and wishes, but also moving from an immature dependent state to a mature independent one.
5. Much of mental life is unconscious.

Psychodynamic psychologists have typically relied primarily on clinical data to support their theories. Because clinical observations are open to many interpretations, many psychologists have been sceptical about psychodynamic ideas. A number of researchers, who are committed both to scientific method and psychodynamic concepts, have been subjecting psychodynamic ideas to experimental tests and trying to integrate them with the body of scientific knowledge in psychology (see Cohen, Milman, Venturyera, & Falissard, 2011; Slipp, 2000; Westen, & Gabbard, 1999). For example, several studies have documented that people who avoid conscious awareness of their negative feelings are at increased risk for a range of health problems such as asthma, heart disease and cancer (Andrew & Dulin, 2007; Singh & Mishra, 2011; Weinberger, 1990). Similarly, psychodynamic explanations have been offered and tested for their relevance to binge drinking (Blandt, 2002); attention-deficit hyperactivity disorder (ADHD; Rafalovich, 2001); and creativity (Esquivel, 2003).

More recently, a literature review of international and Australian research on the effectiveness of psychoanalysis and psychoanalytic psychotherapy suggests that positive long-term outcomes are evident for people with various conditions, including mood disorders, anxiety disorders, sexual dysfunction, and personality disorders (Gaskin, 2014).

Research from the UK confirms these findings (British Psychoanalytic Council, 2017). Long-term psychoanalytic psychotherapy outcomes appear to be equivalent to those achieved via other psychotherapies

and can be sustained after treatment (Gaskin, 2014). Gaskin (2014) further showed that short-term psychoanalytic psychotherapy is effective in treating depressive disorders. Gaskin's review also supports the use of psychodynamic psychotherapy for generalised anxiety disorder, hypochondriasis, and some personality disorders including borderline personality disorder, among others. However, longer-term psychoanalytic psychotherapy of one year or more is more effective than shorter forms of therapy for treating complex mental disorders (British Psychoanalytic Council, 2017). Furthermore, evidence indicates that the long-term benefits of psychodynamic psychotherapy can be sustained over time, after treatment has terminated (Gaskin, 2014).

Criticisms of psychodynamic theory

Although elements of psychodynamic theory still play a huge role in psychology, no theory has been criticised more fervently. Criticisms have been so resounding that many question why the theory attracts any attention in textbooks and courses. Indeed, behaviourist John B. Watson referred to psychodynamic theory as 'voodooism'. A lack of scientific grounding and empirical evidence for its key ideas, its violation of the **falsifiability criterion**, and its reliance on retrospective accounts are just a few of the criticisms aimed at psychodynamic theory. But there is no denying that Freud was a giant in the field and his provocative theories dramatically influenced the discipline of psychology (Dvorsky, 2013).

Psychodynamic theorists argue that its lack of reliance on empirical methods is one of its redeeming features. According to Fonagy (2003), in psychoanalysis 'elusiveness and ambiguity are not only permissible, they may be critical to accurately depict the complexity of human experience' (p. 74). Rather than investigating specific variables that reflect only a fraction of an individual's personality or behaviour, psychodynamic theorists focus on the entire person (Westen, 1998) and the whole of human experience. In addition, by not relying on empirical methods, psychodynamic theorists study phenomena not amenable to more traditional experimental methods. For example, a psychodynamic theorist might study why certain people are drawn to horror stories and movies (Tavris & Wade, 2001). Westen, Novotny, and Thompson-Brenner (2004) argue that research needs to make better use of randomised controlled clinical trials to test the efficacy of psychotherapies, and triangulate conclusions using data collected by other research methods, including clinical practice. Indeed, it has been proposed that advances in neuroimaging and other physiological measurements in clinical practice will see 'the creation of a psychoanalysis that integrates biological and psychological principles into a unified theory of human mental life' (Bornstein, 2005, p. 335).

INTERIM SUMMARY

The **psychodynamic perspective** proposes that people's actions reflect the way thoughts, feelings and wishes are associated in their minds; that many of these processes are unconscious; and that mental processes can conflict with one another, leading to compromises among competing motives. Although their primary method has been the analysis of case studies, reflecting the goal of interpreting the meanings hypothesised to underlie people's actions, psychodynamic psychologists are increasingly using experimental methods to integrate psychodynamic thinking with scientific psychology. This should alleviate the criticism that has traditionally been levelled against psychodynamic theorists for being non-empirical, for violating the **falsifiability criterion**, and for using unreliable measures and approaches.

The behaviourist perspective

You are enjoying an intimate dinner at a little Italian place on Main Street when your partner springs an unexpected piece of news: the relationship is over. Your stomach turns and you leave in tears. One evening a year or two later, your new partner suggests dining at that same restaurant. Just as before, your stomach turns and your appetite disappears.

The second broad perspective that developed in psychology early in the twentieth century, behaviourism, argues that the aversion to that restaurant, like many reactions, is the result of learning —

changes in behaviour based on experience. Whereas the psychodynamic perspective emphasises internal mental events, the **behaviourist** (or **behavioural**) **perspective**, also called **behaviourism**, focuses on the way objects or events in the environment (**stimuli**) come to control behaviour through learning. Thus, the behaviourist perspective focuses on the relationship between external (environmental) events and observable behaviours. Indeed, John Watson (1878–1958), a pioneer of American behaviourism, considered mental events entirely outside the province of a scientific psychology, and B. F. Skinner (1904–1990), who developed behaviourism into a fully fledged perspective years later, stated, 'There is no place in a scientific analysis of behaviour for a mind or self' (1990, p. 1209).

Origins of the behaviourist perspective

At the same time that Freud was developing psychoanalytic theory, Russian physiologist Ivan Pavlov (1849–1936) was conducting experiments on the digestive system of dogs. During these experiments, Pavlov made an important and quite accidental discovery. Once his dogs became accustomed to hearing a particular sound at mealtime, they began to salivate automatically whenever they heard it, much as they would if food was presented. The process that had shaped this new response was learning. Behaviourists argue that human and animal behaviours — from salivation in Pavlov's laboratory to losing one's appetite upon hearing the name of a restaurant associated with rejection — are largely acquired by learning. Indeed, psychologists today have begun to identify biochemical changes in brain cells and neural circuits involved in learning (Martinez & Derrick, 1996), often through the use of Pavlovian-type animal experiments. For example, researchers have demonstrated that injecting rats with a substance that activates glucocorticoid receptors — resulting in a natural biological stress response — enhances the rats' memories of the affective components when they are learning responses to cues (Zorawski & Killcross, 2003). Research has also progressed to the point where interventions focused on neural and behavioural signals involved in re-learning old skills lost after a brain injury are now becoming possible (Kleim, 2011).

Behaviourists asserted that the behaviour of humans, like other animals, can be understood entirely without reference to internal states such as thoughts and feelings. They therefore attempted to counter **Cartesian dualism** (the doctrine of dual spheres of mind and body) by demonstrating that human conduct follows laws of behaviour, just as the law of gravity explains why things fall down instead of up.

The task for behaviourists was to discover how environmental events, or stimuli, control behaviour. John Locke (1632–1704), a seventeenth-century British philosopher, had contended that at birth the mind is a *tabula rasa*, or blank slate, upon which experience writes itself. In a similar vein, John Watson later claimed that if he were given 12 healthy infants at birth, he could turn them into whatever he wanted, doctors or thieves, regardless of any innate dispositions or talents, simply by controlling their environments (Watson, 1925).

The environment and behaviour

The dramatic progress of the natural sciences in the nineteenth century led many psychologists to believe that the time had come to wrest the study of human nature away from philosophers and put it into the hands of scientists. For behaviourists, psychology is the science of behaviour, and the proper procedure for conducting psychological research should be the same as for other sciences — rigorous application of the scientific method, particularly experimentation.

Scientists can directly observe a rat running through a maze, a baby sucking on a plastic nipple to make a mobile turn, and even the increase in a rat's heart rate at the sound of a bell that has previously preceded a painful electric shock. But no-one can directly observe unconscious motives. Science, behaviourists argued, entails making observations on a reliable and calibrated instrument that others can use to make precisely the same observations. If two observers can view the same data differently, as often occurs with psychodynamic inferences, how can a scientist test a hypothesis?

According to behaviourists, psychologists cannot even study conscious thoughts in a scientific way because no-one has access to them except the person reporting them. Structuralists such as Titchener had used introspection to understand the way conscious sensations, feelings and images fit together. But behaviourists such as Watson questioned the scientific value of this research, since the observations on

which it relied could not be independently verified. They proposed an alternative to psycho-dynamic and introspective methods: study observable behaviours and environmental events and build a science around the way people and animals *behave*. Hence the term behaviourism. Today, many behaviourists acknowledge the existence of mental events but do not believe these events play a *causal* role in human affairs. Rather, from the behaviourist perspective, mental processes are by-products of environmental events.

Probably the most systematic behaviourist approach was developed by B. F. Skinner. Building on the work of earlier behaviourists, Skinner observed that the behaviour of organisms can be controlled by environmental consequences that either increase (reinforce) or decrease (punish) their likelihood of occurring. Subtle alterations in these conditions, such as the timing of an aversive consequence, can have dramatic effects on behaviour. Most dog owners can attest that swatting a dog with a rolled-up newspaper after it grabs a piece of steak from the dinner table can be very useful in suppressing the dog's unwanted behaviour, but not if the punishment comes an hour later.

Psychologist B. F. Skinner developed behaviourism as a fully fledged perspective during the twentieth century.

Behaviourist researchers have discovered that this kind of learning can help control some very unlikely behaviours in humans. For example, by giving people feedback on their biological or physiological processes (biofeedback), psychologists can help them to learn to control 'behaviours' such as headaches, chronic pain and blood pressure (Kapitza, Passie, Bernateck, & Karst, 2010; Nestoriuc, Martin, Rief, & Andrasik, 2008; Palomba et al., 2011).

Metaphors, methods and data of behaviourism

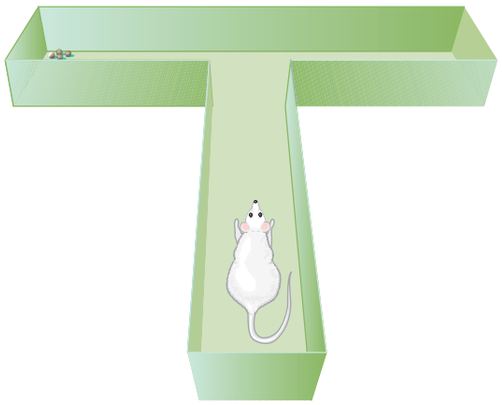
A primary metaphor of behaviourism is that humans and other animals are like machines. Just as pushing a button starts the coffee maker, presenting food triggered an automatic response in Pavlov's dogs. Similarly, opening this text probably triggered the learned behaviour of underlining and note taking. Some behaviourists also view the mind as a 'black box' whose mechanisms can never be observed. A stimulus enters the box, and a response comes out; what happens inside is not the behaviourist's business. Other behaviourists are interested in what might occur in that box but remain unconvinced that it is accessible to scientific investigation with current technologies. Consequently, they prefer to study what *can* be observed — the relationship between what goes in and what comes out.

The primary method of behaviourism is experimental. The experimental method entails framing a hypothesis, or prediction, about the way certain environmental events will affect behaviour and then creating a laboratory situation to test that hypothesis. Consider two rats placed in simple mazes shaped like the letter T, as shown in figure 1.2. The two mazes are identical in all respects but one: pellets of food lie at the end of the left arm of the first rat's maze but not of the second. After a few trials (efforts at running through the maze), the rat that obtains the reward will be more likely to turn to the left and run the maze faster. The experimenter can now systematically modify the situation, again observing the results over several trials. What happens if the rat is rewarded only every third time? Every fourth time? Will it run faster or slower? Because these data can be measured quantitatively, experimenters can test the accuracy of their predictions and they can apply them to practical questions, such as how an employer can maximise the rate at which employees produce a product.

Behaviourism was the dominant perspective in psychology, particularly in North America, from the 1920s to the 1960s. Pure behaviourism has lost favour in the last two decades as psychology has once again become concerned with the study of mental processes. Many psychologists believe that thoughts

about the environment are just as important in controlling behaviour as the environment itself (Bandura, 1977a, 1977b, 1999; Mischel, 1990; Mischel & Shoda, 1995; Rotter, 1966, 1990). Some contemporary behaviourists even define behaviour broadly to include thoughts as private behaviours (see Calkin, 2002, for a review). Nevertheless, traditional behaviourist theory continues to have widespread applications, from helping people to quit smoking to enhancing children's learning in school.

FIGURE 1.2 A standard T-maze from a behaviourist experiment. The experimenter controls the rat's behaviour by giving or eliminating rewards in one arm or the other of the T.



Two contributions of the behaviourist perspective to psychology cannot be overestimated. The first is its focus on learning and its postulation of a mechanism for many kinds of learning: reward and punishment. Behaviourists offer a fundamental insight into the psychology of humans and other animals that can be summarised in a simple but remarkably important formula: behaviour follows its consequences. The notion that the consequences of our actions shape the way we behave has a long philosophical history, but the behaviourists were the first to develop a sophisticated, scientifically based set of principles that describe the way environmental events shape behaviour. The second major contribution of the behaviourist approach is its emphasis on **empiricism** — the belief that the path to scientific knowledge is systematic observation and, ideally, experimental observation.

INTERIM SUMMARY

The **behaviourist perspective** focuses on learning and studies the way environmental events control behaviour. Behaviourists reject the concept of 'mind', viewing mental events as the contents of a black box that cannot be known or studied scientifically. Scientific knowledge comes from using experimental methods to study the relationship between environmental events and behaviour.

The humanistic perspective

Humanistic theories focus on the uniqueness of the individual. Abraham Maslow (1908–1970) and Carl Rogers (1902–1987) are two key figures in humanistic psychology. They both emphasised **self-actualisation** — the idea that people are motivated to reach their full potential. The **humanistic perspective** represents an optimistic view of human experience. It assumes that people are innately good and will almost always choose adaptive, goal-directed and self-actualising behaviours.

Origins of the humanistic perspective

During the 1950s and especially the 1960s, an approach to personality emerged as an alternative to psychoanalysis and behaviourism. Unlike these approaches, humanistic approaches focus on aspects of

personality that are distinctly human, not shared by other animals. How do people find meaning in life? How can they remain true to themselves amid lifelong pressures to accommodate other people's wishes and preconceptions? Many humanistic psychologists argue that scientific methods borrowed from the natural sciences are inappropriate for studying people, whose actions, unlike those of fish or asteroids, reflect the way they understand and experience themselves and the world.

Abraham Maslow, a key figure in humanistic psychology, emphasised the idea that people are motivated to reach their full potential.

Metaphors, methods and data of the humanistic perspective

A humanistic metaphor is that life is like a bottle of milk — the cream always rises to the top. Imagine a young man growing up in a poverty-stricken home environment. He longs to study at university but does not have any financial support or resources to assist him. The young man enjoys studying and does well in school, despite the barriers his home environment presents. He longs to attend university, to fulfil his lifelong dream of becoming a lawyer to help underprivileged children. Why will this man strive hard to realise his goals and ambitions? According to humanistic theory, he will do so to become a self-fulfilled individual and reach his full potential. He is driven by a desire to achieve all that he is capable of — it does not matter that he comes from a disadvantaged home environment.

The humanistic approach focuses on the individual's unique perspective and experience. Humanistic theorists believe that people are not powerless victims of external forces but have an innate desire to improve themselves and fulfil their own potential. The goals people set for themselves are influenced by their own personal and subjective experiences. They can be chosen consciously as people strive to self-actualise. As a result, humanistic methods typically centre on helping individuals to understand their unique frame of reference and work towards achieving their desire to be the 'best' that they can be. The humanistic approach is very much **person-centred** and relies on the therapist showing **empathy**. The idea is to treat people with respect and warmth, stressing every individual's freedom to make their own choices. Helping people to consciously and deliberately set self-actualisation goals modifies their behaviour.

The data of humanistic theory include the thoughts, motives and actions that reflect a person's inner drive to realise their full potential. Humanists assume that people will act in ways that help them to achieve their life goals. They emphasise the central role of consciousness in shaping our behaviours, assuming that personal experience is a powerful medium for people to become more self-aware and self-directed.

The humanistic perspective emphasises the uniqueness of individuals and their potential for personal growth. Both Rogers (1959) and Maslow (1962) asserted that the prime motivator of all human behaviour is self-actualisation — an innate tendency that we have towards fulfilling our potential. According to this perspective, the way in which people perceive their own worlds determines their behaviour. Humanistic theorists believe that people experience problems when there is a discrepancy between their **self-concept** and the **ideal self**. This can occur when our expectations exceed our achievements. The humanistic approach readily lends itself to therapy because it focuses on the person's immediate experience. However, some critics have viewed this perspective as naive because it assumes that people are basically 'good' and will grow if given the opportunity. The number of people in jails all around the world is one argument that people do not always act this way.

INTERIM SUMMARY

The **humanistic perspective** emphasises the uniqueness of the individual and focuses on the person's immediate experience. Humanistic theorists assert that people have free will — the freedom to make choices so that they can fulfil their potential. According to this perspective, people are motivated to achieve personal goals so that they can fulfil their true potential.

The cognitive perspective

In the past 30 years, psychology has undergone a 'cognitive revolution'. Today the study of **cognition**, or thought, dominates psychology in the same way that the study of behaviour dominated in the middle of the twentieth century. Indeed, the history of psychology could be viewed as a series of shifts: from the 'philosophy of the mind' of the Western philosophers, to the 'science of the mind' in the work of the structuralists, to the 'science of behaviour' in the research of the behaviourists, to the 'science of behaviour and mental processes' in contemporary, cognitively informed psychology. The humanistic approach of the 1950s and 1960s was a shift away from the 'science' of psychology towards a focus on the unique experiences of each individual.

The **cognitive perspective** focuses on the way people perceive, process and retrieve information. Cognitive psychology has roots in experiments conducted by Wundt and others in the late nineteenth century that examined phenomena such as the influence of attention on perception and the ability to remember lists of words. Gestalt psychology, too, was arguably a cognitive psychology, in its focus on the way people organise sensory information into meaningful units.

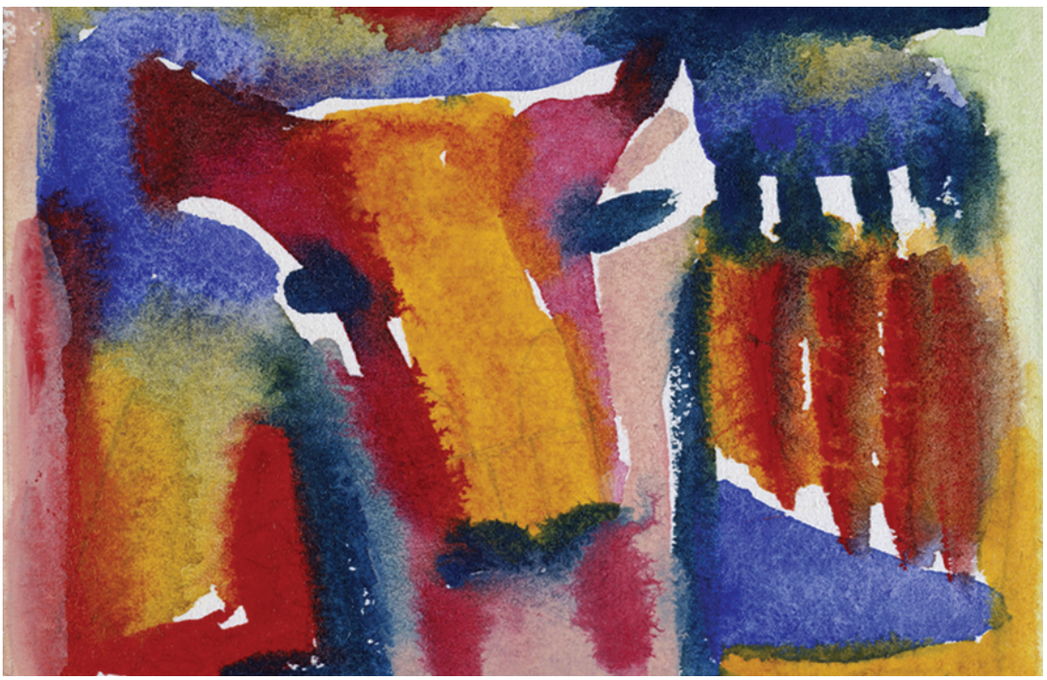
In large measure, though, the cognitive perspective owes its contemporary form to a technological development — the computer. Many cognitive psychologists use the metaphor of the computer to understand and model the way the mind works. From this perspective, thinking is **information processing**: the environment provides inputs, which are transformed, stored and retrieved using various mental 'programs', leading to specific response outputs. Just as the computer database of a bookstore codes its inventory according to topic, title, author and so on, human memory systems encode information in order to store and retrieve it. The coding systems we use affect how easily we can later access information. Thus, most people would find it hard to name the tenth prime minister of Australia (but easier to name the prime minister responsible for introducing the same-sex marriage plebiscite) because they do not typically code prime ministers numerically.

To test hypotheses about memory, researchers need ways of measuring it. One way is simple: ask a question like, 'Do you remember seeing this object?' A second method is more indirect: see how quickly people can name an object they saw some time ago. Our memory system evolved to place frequently

used and more recent information at the front of our memory 'files' so that we can get to it faster. This makes sense, since dusty old information is less likely to be relevant to our immediate environment. Thus, response time is a useful measure of memory.

For example, one investigator used both direct questions and response time to test memory for objects seen weeks or months before (Cave, 1997). Initially, she rapidly flashed more than 100 drawings on a computer screen and asked participants to name them as quickly as they could. That was the participants' only exposure to the pictures. In a second session, weeks or months later, she mixed some of the drawings in with others the students had *not* seen and asked them either to tell her whether they recognised them from the earlier session or to name them.

When asked directly, participants were able to distinguish the old pictures from new ones with better-than-chance accuracy as many as 48 weeks later; that is, they correctly identified which drawings they had seen previously more than half the time. Perhaps more striking, as figure 1.3 shows, almost a year later they were also faster at naming the pictures they had seen previously than those they had not seen. Thus, exposure to a visual image appears to keep it towards the front of our mental files for a very long time.



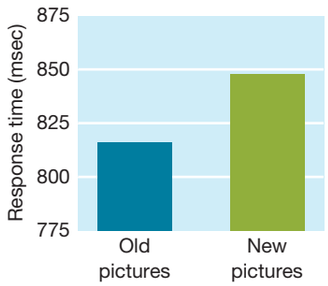
MAKING CONNECTIONS

How do people recognise the abstract object in this painting as a dog? According to cognitive psychologists, people categorise an object that resembles a dog by comparing it to examples of dogs, generalised knowledge about dogs, or defining features of dogs stored in memory (chapter 8).

The cognitive perspective is useful not only in examining memory but also in understanding processes such as decision making. When people enter a car showroom, they have a set of attributes in their minds: for example, smooth ride, sleek look, good fuel economy, affordable price. They must also process a great deal of new information (the car dealer's description of one model as a 'real steal', for instance) and match it with stored linguistic knowledge. This allows them to comprehend the meaning of

the dealer's speech, such as the connotation of 'real steal' (from both his viewpoint and theirs). In deciding which car to buy, they must somehow integrate information about multiple attributes and weigh their importance. As we will see, some of these processes are conscious or explicit, whereas others happen through the silent whirring of our neural 'engines'.

FIGURE 1.3 Response time in naming drawings 48 weeks after initial exposure. This graph shows the length of time participants took to name drawings they saw 48 weeks earlier ('old' drawings) versus similar drawings they were seeing for the first time. Response time was measured in milliseconds (thousandths of a second). As can be seen, at 48 weeks — nearly a year — participants were faster at naming previously seen pictures.



Source: Cave (1997).

APPLY AND DISCUSS

A four-year-old is about to grab a lolly off the shelf at a shop, and his older sister says, 'No, don't take that. That would be stealing'.

- How would a psychologist from a behaviourist perspective explain both children's behaviour? How did their learning history shape their actions?
- How would a psychologist from a cognitive perspective explain their behaviour? What made the four-year-old think that inside this lolly wrapper would be something tasty? How did the older child learn to resist such temptations and to view stealing as wrong?

Origins of the cognitive perspective

The philosophical roots of the cognitive perspective lie in a series of questions about where knowledge comes from that the ancient Greek philosophers first raised and that British and European philosophers pondered during the last four centuries (see Gardner, 1985). Descartes, like Plato, reflected on the remarkable truths of arithmetic and geometry and noted that the purest and most useful abstractions — such as a hypotenuse, pi or a square root — could never be observed by the senses. Rather, the mind itself appeared to generate this kind of knowledge. Other philosophers, beginning with Aristotle, emphasised the role of experience in generating knowledge. Locke proposed that complex ideas arise from the mental manipulation of simple ideas and that these simple ideas are products of the senses, of observation.

The behaviourists roundly rejected Descartes' view of an active, reasoning mind that can arrive at knowledge independently of experience. Cognitive psychologists, in contrast, are interested in many of the questions raised by Descartes and other **rationalist philosophers**, who emphasised the role of reason in creating knowledge. For example, cognitive psychologists have studied the way people form abstract concepts or categories. These concepts are derived in part from experience, but they often differ from any particular instance the person has ever perceived, so they must be mentally constructed (Medin & Heit, 1999; Smith, 1995). Children can recognise that a bulldog is a dog, even if they have never seen one before, because they have formed an abstract concept of 'dog' that goes beyond the details of any specific dogs they have seen.

Metaphors, methods and data of cognitive psychology

Both the cognitive and behaviourist perspectives view organisms as machines that respond to environmental input with predictable output. Some cognitive theories even propose that a stimulus evokes a series of mini-responses inside the head, much like the responses that behaviourists study outside the head (Anderson, 1983). However, most cognitive psychologists rely on different metaphors than their behaviourist colleagues. When the cognitive perspective emerged, perhaps what differentiated it most was that it filled the black box of the behaviourists with software — mental programs that produce output.

Many cognitive psychologists use the brain itself as a metaphor for the mind (e.g., Bassett & Gazzaniga, 2011; Burgess & Hitch, 1999; McClelland, 1995). According to this view, an idea can be conceived as a network of brain cells that are activated together. Thus, whenever a person thinks of the concept 'bird', a certain set of nerve cells becomes active. Confronting a stimulus that resembles a bird activates part of the network; if enough of the network becomes active, the person concludes that the animal is a bird. A person is likely to recognise a sparrow as a bird quickly because it resembles most other birds and hence immediately activates most of the 'bird' network. Correctly classifying a penguin takes longer because it is less typically 'birdlike' and activates less of the network.

As with behaviourism, the primary method of the cognitive perspective is experimental, albeit with one important difference. Cognitive psychologists use experimental procedures to infer mental processes at work. For example, when people try to retrieve information from a list (such as the names of cities or towns), do they scan all the relevant information in memory until they hit the right item?

One way psychologists have explored this question is by presenting subjects with a series of word lists of varying lengths to memorise, such as those in figure 1.4. Then they ask the participants in the study if particular words were on the lists. If participants take longer to recognise that a word was *not* on a longer list — which they do — they must be scanning the lists sequentially (that is, item by item), because additional words on the list take additional time to scan (Lalor, 2002; Sternberg, 1975).

FIGURE 1.4 Two lists of words used in a study of memory scanning. Giving participants in a study two lists of city names provides a test of the memory-scanning hypothesis. Dubbo is not on either list. If an experimenter asks whether Dubbo was on the list, participants take longer to respond to list A than to list B because they have to scan more items in memory.

List A	List B
Longreach	Albury
Ballarat	Fremantle
Mackay	Dalby
Newcastle	Launceston
Bathurst	Charleville
Caloundra	Lismore
Woomera	Nambour
Tamworth	Warwick
Emerald	Winton
Cessnock	

Cognitive psychologists primarily study processes such as memory and decision making. Other cognitive psychologists have attempted to use cognitive concepts and metaphors to explain a much wider range of phenomena (Cantor & Kihlstrom, 1987; Sorrentino & Higgins, 1996). Cognitive research on emotion, for example, documents that the way people think about events plays a substantial role in generating emotions (Davis, Levine, Lench, & Quas, 2010; Lazarus, 1999a, 1999b).

INTERIM SUMMARY

The **cognitive perspective** focuses on the way people perceive, process and retrieve information. Cognitive psychologists are interested in how memory works, how people solve problems and make decisions, and similar questions. The primary metaphor originally underlying the cognitive perspective was the mind as a computer. In recent years, many cognitive psychologists have turned to the brain itself as a source of metaphors. The primary method of the cognitive perspective is experimental.

The evolutionary perspective

- The impulse to eat in humans has a biological basis.
- The sexual impulse in humans has a biological basis.
- Caring for offspring has a biological basis.
- The fact that most males are interested in sex with females, and vice versa, has a biological basis.
- The higher incidence of aggressive behaviour in males than in females has a biological basis.
- The tendency to care more for one's own offspring than for the offspring of other people has a biological basis.

Most people fully agree with the first of these statements, but have growing doubts as they move down the list. The degree to which inborn processes determine human behaviour is a classic issue in psychology, called the **nature–nurture controversy**. Advocates of the 'nurture' position maintain that behaviour is primarily learned and not biologically ordained. Other psychologists, however, point to the similarities in behaviour between humans and other animals, from chimpanzees to birds, and argue that some behavioural similarities are so striking that they must reflect shared tendencies rooted in biology. Indeed, anyone who believes the sight of two male teenagers brawling behind the local high school for the attention of a popular girl is distinctively human should observe the behaviour of rams and baboons. As we will see, many, if not most, psychological processes reflect an *interaction* of nature and nurture. Biological and genetic factors predispose people and other animals to certain physical and psychological experiences. It is the environment, however, that often determines the degree to which these predispositions actually manifest themselves.

APPLY AND DISCUSS

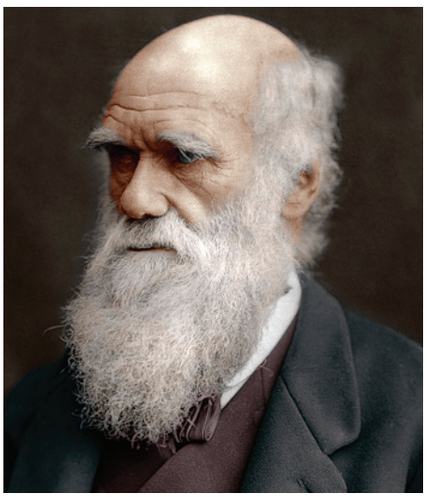
Humans, like other animals, take care of their young.
- Is this behaviour instinctive?
- How might a behaviourist explain the same phenomenon?

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 children. Why, for example, are young children so upset by separation from their parents? From an evolutionary perspective, a deep emotional bond between parents and children stops them straying too far from each other while children are immature and vulnerable. Breaking this bond leads to tremendous distress.

Like the functionalists at the turn of the century, evolutionary psychologists believe that most enduring human attributes at some time served a function for humans as biological organisms (Buss, 1991, 2000). They argue that this is as true for physical traits — such as the presence of two eyes (rather than one), which allows us to perceive depth and distance — as for cognitive and emotional tendencies such as a child's distress over the absence of parents. The implication for psychological theory is that understanding human mental processes and behaviours requires insight into their evolution.

Origins of the evolutionary perspective

The evolutionary perspective is rooted in the writings of Charles Darwin (1859). Darwin did not invent the concept of evolution, but he was the first to propose a mechanism that could explain it — **natural selection**. Darwin argued that natural forces select traits in organisms that are adaptive and are likely to be passed on to their offspring. **Adaptive traits** are characteristics that help organisms to adjust and survive in their environment. Selection of organisms occurs 'naturally' because those not endowed with features that help them adapt to their particular environmental circumstances are less likely to survive and reproduce. In turn, they have fewer offspring to survive and reproduce.



Charles Darwin revolutionised human self-understanding in 1859 by rewriting the family tree.

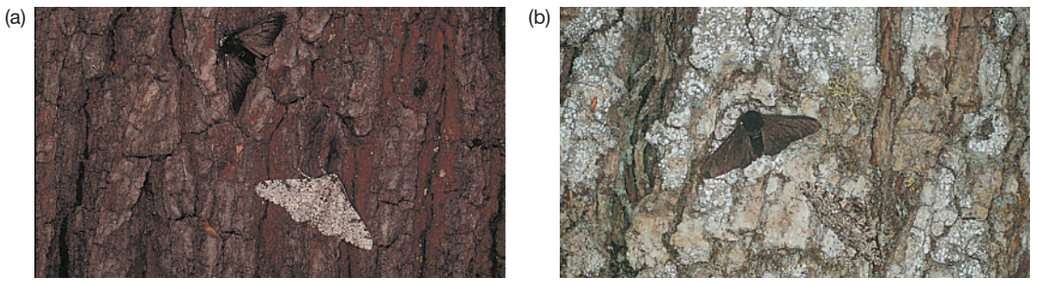
A classic example of natural selection occurred in Birmingham, Liverpool, Manchester and other industrial cities in England (Bishop & Cook, 1975). A light-coloured variety of peppered moth that was common in rural areas of Britain also populated most cities. But as England industrialised in the nineteenth century, light-coloured moths became scarce in industrial regions and dark-coloured moths predominated.

How did this happen? With industrialisation, the air became sooty, darkening the bark of the trees on which these moths spent much of their time. Light-coloured moths were thus easily noticed and eaten by predators. Before industrialisation, nature selected against darker moths because they were conspicuous on light-coloured bark. Now, however, darker moths blended better into the background of the dark tree trunks (figure 1.5). As a result, they survived to pass on their colouration to the next generation. Over decades, the moth population changed to reflect the differential selection of light and dark varieties. Since England has been cleaning up its air through more stringent pollution controls in the past 30 years, the trend has begun to reverse.

The peppered moth story highlights a crucial point about evolution: because adaptation is always relative to a specific environment, evolution is not synonymous with progress. A trait or behaviour that is highly adaptive can suddenly become maladaptive in the face of even a seemingly small change in the environment. A new insect that enters a geographical region can eliminate a flourishing crop, just as the arrival of a warlike tribe (or nation) in a previously peaceful region can render prior attitudes towards war and peace maladaptive. People have used Darwinian ideas to justify racial and class prejudices ('people

on welfare must be naturally unfit'), but sophisticated evolutionary arguments contradict the idea that adaptation or fitness can ever be absolute. Adaptation is always relative to a niche.

FIGURE 1.5 The natural selection of moth colour. As environmental conditions changed in industrial England, so, too, did the moth population. In (a), where two pepper moths rest on the dark bark of an oak tree in Manchester, the darker moth is better camouflaged. With industrialisation, darker moths were better adapted to their environments. In contrast, (b) shows a light-coloured oak bark typical of rural Wales, where the light moth is extremely difficult to see and hence better able to evade its predators.



Ethology, sociobiology and evolutionary psychology

If Darwin's theory of natural selection can be applied to characteristics such as the colour of a moth, can it also apply to behaviours? It stands to reason that certain behaviours, such as the tendency of moths to rest on trees in the first place, evolved because they helped members of the species to survive. In the middle of the twentieth century the field of **ethology**, which studies animal behaviour from a biological and evolutionary perspective (Hinde, 1982), began to apply this sort of evolutionary approach to understanding animal behaviour.

For example, several species of birds emit warning cries to alert their flock about approaching predators; some even band together to attack. Konrad Lorenz, an ethologist who befriended a flock of black jackdaws, was once attacked by the flock while carrying a wet black bathing suit. Convinced that the birds were not simply offended by the style, Lorenz hypothesised that jackdaws have an inborn, or innate, tendency to become distressed whenever they see a creature dangling a black object resembling a jackdaw, and they respond by attacking (Lorenz, 1979).

If animal behaviours can be explained by their adaptive advantage, can the same logic be applied to human behaviour? Harvard biologist E. O. Wilson (1975) christened a new and controversial field called **sociobiology**, which explores possible evolutionary and biological bases of human social behaviour. Sociobiologists and **evolutionary psychologists**, who apply evolutionary thinking to a wide range of psychological phenomena, propose that genetic transmission is not limited to physical traits such as height, body type or vulnerability to heart disease. Parents also pass onto their children behavioural and mental tendencies. Some of these are universal, such as the need to eat and sleep or the capacity to perceive certain wavelengths of light. Others differ across individuals.

As we will see in later chapters, research in **behavioural genetics** — a field that examines the genetic and environmental bases of differences among individuals on psychological traits — suggests that heredity is a surprisingly strong determinant of many personality traits and intellectual skills. The tendencies to be outgoing, aggressive or musically talented, for example, are all under partial genetic control (Loehlin, 1992; Plomin, DeFries, McClearn, & Rutter, 1997).

Perhaps the fundamental concept in all contemporary evolutionary theories is that evolution selects organisms that maximise their reproductive success. **Reproductive success** refers to the capacity to survive and produce offspring. Over many generations, organisms with greater reproductive success will have many more descendants because they will survive and reproduce more than other organisms, including

other members of their own species. Central to evolutionary psychology is the notion that the human brain, like the eye or the heart, has evolved through natural selection to solve certain problems associated with survival and reproduction, such as selecting mates, using language, competing for scarce resources, and cooperating with kin and neighbours who might be helpful in the future (Tooby & Cosmides, 1992).

For example, we take for granted that people usually tend to care more about, and do more for, their children, parents and siblings than for their second cousins or non-relatives. Most of you have probably received more financial support from your parents in the last five years than from your aunts and uncles. This seems natural — and we rarely wonder about it — but *why* does it seem so natural? And what are the causes of this behavioural tendency?

From an evolutionary perspective, individuals who care for others who share their genes will have more of their genes in the gene pool generations later. And the genes involved in promoting that caring tendency in those individuals will be preferentially passed on as well. As a result, the caring trait (or predisposition for it) will also be passed on. Thus, evolutionary theorists have expanded the concept of reproductive success to encompass **inclusive fitness**, which refers not only to an individual's own reproductive success but also their influence on the reproductive success of genetically related individuals (Daly & Wilson, 1988; Hamilton, 1964).

According to the theory of inclusive fitness, natural selection favours animals whose concern for kin is proportional to their degree of biological relatedness. In other words, animals should devote more resources and offer more protection to close relatives than to more distant kin. The reasons for this preference are strictly mathematical. Imagine you are sailing with your brother or sister and with your cousin, and the ship capsizes. Neither your sibling nor your cousin can swim, and you can save only one of them. Who will you save?

Most readers (after a brief flicker of sibling rivalry) opt for the sibling because first-degree relatives share much more genetic material than more distant relatives such as cousins. Siblings share half of their genes, whereas cousins share only one-eighth. In crass evolutionary terms, two siblings are worth eight cousins. Evolution selects the neural mechanisms that make this preference feel natural — so natural that psychologists have rarely even thought to explain it.

At this point you might object that the real reason for saving the sibling over the cousin is that you know the sibling better; you grew up together, and you have more bonds of affection. This poses no problem for the evolutionary theorist, since familiarity and bonds of affection are probably the psychological mechanisms selected by nature to help you in your choice. When human genes were evolving, close relatives typically lived together. People who were familiar and loved were more often than not relatives. Humans who protected others based on familiarity and affection would be more prevalent in the gene pool thousands of years later because more of their genes would be available.

Metaphors, methods and data of the evolutionary perspective

Darwin's theory of natural selection is part of a tradition of Western thought since the Renaissance that emphasises individual self-interest and competition for scarce resources. Perhaps the major metaphor underlying the evolutionary perspective is borrowed from another member of that tradition, sixteenth-century philosopher Thomas Hobbes (1588–1679). According to Hobbes, wittingly or unwittingly, we are all in competition for survival, sexual access to partners, and resources for our kin and ourselves.

Evolutionary methods are frequently deductive; that is, they begin with an observation of something that already exists in nature and try to explain it with logical arguments. For instance, evolutionists might begin with the fact that people care for their kin and try to deduce an explanation. This method is very different from experimentation, in which investigators create circumstances in the laboratory and test the effect of changing these conditions on behaviour. Many psychologists have challenged the deductive methods of evolutionary psychologists, just as they criticise psychodynamic explanations of individual

cases. They argue that predicting behaviour in the laboratory is much more difficult and therefore convincing than explaining what has already happened.

One of the most distinctive features of evolutionary psychology in recent years has been its application of experimental and other procedures that involve *prediction* of behaviour in the laboratory, rather than after-the-fact explanation (Buss, Larsen, Westen, & Semmelroth, 1992). For example, studies from the United States, Canada and Germany have used evolutionary theory to predict the extent to which grandparents will invest in their grandchildren (DeKay, 1998; Euler, & Weitzel, 1996). According to evolutionary theory, a major problem facing males in many animal species is paternity uncertainty — not knowing that their presumed offspring are really theirs. Female primates (monkeys, apes and humans) are always certain that their children are their own because they bear them. Males, on the other hand, can never be totally certain of paternity.

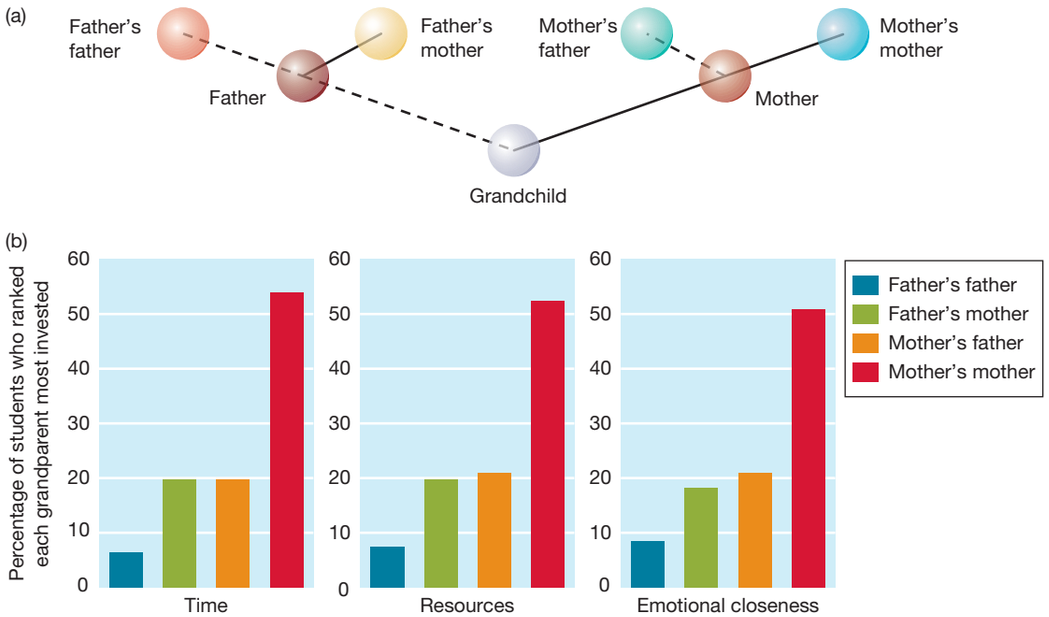
If a male is going to invest time, energy and resources in a child, he wants to be certain the child is his. Not surprisingly, many males develop elaborate ways to minimise the possibility of accidentally investing in another male's offspring, such as guarding their mates during fertile periods and killing off an infant born too close to the time at which they began copulating with the infant's mother. In humans, suspected or real infidelity is a major cause of spouse battering and homicide committed by men (Daly & Wilson, 1988).

Research suggests that grandparental investment may be highest in maternal grandmothers and lowest in paternal grandfathers.

Evolutionary psychologists use the concept of paternity uncertainty to make specific and novel predictions about patterns of *grandparental* investment in children. As shown in figure 1.6a, the father's father is the least certain of all grandparents that his grandchildren are really his own, since he did not bear his son, who did not bear his child. The mother's mother is the most certain of all grandparents because she is sure that her daughter is hers, and her daughter is equally certain that she is the mother of her children.

The other two grandparents (father's mother and mother's father) are intermediate in certainty. This analysis leads to a hypothesis about the extent to which grandparents will invest in their grandchildren: the greatest investment should be seen in maternal grandmothers, the least in paternal grandfathers, and intermediate levels in paternal grandmothers and maternal grandfathers.

FIGURE 1.6 (a) Certainty of genetic relatedness. Dashed lines indicate uncertainty of genetic relatedness, whereas solid lines indicate certainty. As can be seen, the father's father is least certain that his presumed grandchild is his own (dashed lines between both himself and his son and his son and the son's child), whereas the mother's mother is most certain. Each of the other two grandparents is sure of one link but unsure of the other. (b) Rankings of grandparental investment. This graph shows the percentage of participants in the study who ranked each grandparent the highest of all four grandparents on investment (measured two ways) and on emotional closeness. Students ranked their maternal grandmothers most invested and close and their paternal grandfathers least invested and close on all three dimensions (based on DeKay, 1998).



To test this hypothesis, one study asked US college students to rank their grandparents on a number of dimensions, including emotional closeness and amount of time and resources their grandparents invested in them (DeKay, 1998). On each dimension, the pattern was as predicted: maternal grandmothers, on the average, were ranked most invested of all four grandparents and paternal grandfathers least invested. Figure 1.6b shows the percentage of college students who ranked each grandparent a 1 — that is, most invested or most emotionally close. A similar pattern emerged in a German study (Euler & Weitzel, 1996), and in a Canadian study by Boon and Brussoni (1996). Although a critic could generate alternative explanations, these studies are powerful because the investigators tested hypotheses that were not intuitively obvious or readily predictable from other perspectives. Thus, according to the evolutionary perspective, individuals are simply acting according to their genetic make-up and inherent tendencies.

The evolutionary perspective asks basic questions about psychological processes that direct our attention to phenomena we might easily take for granted. *Why* do we think, feel or behave the way we do as opposed to some other way? The evolutionary perspective suggests a single and deceptively simple principle: we think, feel and behave in ways that helped our ancestors adapt to their environments, and hence to survive and reproduce.

INTERIM SUMMARY

The **evolutionary perspective** argues that many human behavioural tendencies evolved because they helped our ancestors to survive and reproduce. Psychological processes have evolved through the natural selection of traits that help organisms adapt to their environment. Evolution selects organisms that maximise their reproductive success, defined as the capacity to survive and reproduce as well as to maximise the reproductive success of genetically related individuals. Although the methods of evolutionary theorists have traditionally been deductive and comparative, evolutionary psychologists are increasingly using experimental methods.

It is interesting to compare the five perspectives on psychology. Consider, as a start, the following summary.

- The psychodynamic perspective originates from the work of Sigmund Freud and argues that behaviour is largely the result of unconscious motives and early experiences. Psychoanalytic therapy involves inferring underlying wishes, motives and fears from an individual's conscious, verbalised thought and behaviour.
- The behaviourist perspective originates from the early work of Pavlov and Skinner and focuses on learning — examining the way the environment shapes behaviour. Behaviour therapists advocate that experimental methods are needed to advance scientific understanding of human behaviour.
- The humanistic perspective represents an optimistic view of human behaviour and focuses on the uniqueness of the individual. Both Maslow and Rogers emphasised self-actualisation — the belief that people are motivated to reach their full potential. Humanistic therapists are person-centred, showing empathy to help individuals realise their potential for personal growth.
- Cognitive psychology focuses on the way people perceive, process and retrieve information. Descartes' interest in the role of reasoning in creating knowledge prompted cognitive psychologists to examine how memory works and how people form abstract ideas, solve problems and make decisions.
- The evolutionary perspective stems from the work of Darwin and emphasises natural selection, whereby adaptive behavioural traits are passed through generations to help individuals adapt and survive in their environments.

The key figures, basic principles, metaphors and methods of the five perspectives on psychology are also described in table 1.2.

TABLE 1.2 Key perspectives on psychology

Perspective	Key figures	Basic principles	Metaphors	Methods
Psychodynamic	Sigmund Freud	Behaviour is largely the result of unconscious processes, motivation and early experiences.	Consciousness is like the tip of an iceberg; the mind is like a battleground for warring factions.	Interpretation of verbal discourse, slips of the tongue, dreams, fantasies, actions and postures; case studies; limited experimentation
Behaviourist	B. F. Skinner	Behaviour is learned and selected by its environmental consequences.	Humans and other animals are like machines; the mind is like a black box.	Experimentation with humans and other animals

(continued)

TABLE 1.2 *(continued)*

Perspective	Key figures	Basic principles	Metaphors	Methods
Humanistic	Carl Rogers	Behaviour and experience are shaped by the need to self-actualise, to fulfil one's inner potential.	Life is like a bottle of milk — the cream always rises to the top. This is an optimistic view of behaviour, emphasising that everyone aims to be the 'best' person they can be.	Person-centred therapeutic approach that emphasises empathy, acceptance and respect for the individual
Cognitive	René Descartes (Descartes' early philosophical questions led many cognitive psychologists to emphasise the role of reason in creating knowledge.)	Behaviour is the product of information processing: storage, transformation and retrieval of data.	The mind is like a computer; enduring patterns of thought are like software.	Experimentation with humans; computer modelling
Evolutionary	Charles Darwin	Psychological processes reflect evolutionary process of natural selection.	Life is like a race for survival and reproduction.	Deduction of explanations for traits and behaviours; cross-species and cross-cultural comparisons; limited experimentation

COMMENTARY

Complex issues demand complex solutions: integrating multiple psychological perspectives

BY ASSOCIATE PROFESSOR SUSANA GAVIDIA-PAYNE, RMIT UNIVERSITY

It is not uncommon when we first study psychology, or even when we commence our professional lives as psychologists, to 'take sides' and favour one theoretical position over another. Over time, once we have more exposure to the complexity of human life and its context, we discover that taking advantage of the variety of benefits that different psychological approaches have to offer may be our best bet. Transferring this thinking to our everyday psychological practice and research will often lead us to find the delicate balance that the interaction between various biological and environmental determinants of human behaviour requires.

Within specialised fields, such as working with young children with developmental disabilities, this approach is imperative. Psychologists, in collaboration with other specialists, spend much of their time designing early interventions to address these children's learning and developmental difficulties.

Such was the case for Anita, a three-year-old girl with Down syndrome — a condition characterised by intellectual disability, in addition to a variety of health-related concerns. Anita lives with her parents, siblings and grandparents, all of whom migrated to Australia from Colombia just before her birth. Where to start in designing an early intervention? Anita would need to begin a therapeutic program as soon as possible to take advantage of what we know about neuroplasticity and its importance in later development (National Scientific Council on the Developing Child, 2007). The consideration of her broader cultural context was as important — what would her family value as 'good' intervention? Australian research evidence tells us that families often create their own routines, underpinned by their values and beliefs, in order to address their concerns about their child with a disability (Hughes-Scholes, Gavidia-Payne, Davis, & Mahar, 2017).

Anita's family may have different ideas than an Australian-trained psychologist about what is best for her, as Blacher, Begum, Marcoulides, and Baker (2013) demonstrated in their study of Anglo and Latino families.

To fully understand Anita's experience, it is critical that we not only recognise the biological and cultural imperatives, but also that we reflect on the several psychological perspectives that can be used. For example, the design of a learning program for Anita would be well-supported by following behavioural principles, while respecting the potential of Anita's family to grow through their own decisions and choices would call for a humanistic approach. By examining contemporary psychological approaches that incorporate constructs, such as memory and attachment, into an 'interpersonal neurobiology' conceptual foundation (Siegel, 2012), Anita could gain from the powerful role of relationships in her life. Furthermore, the influence of distant macro systems, proposed in the bioecological perspective (Bronfenbrenner, 2005) may be just as relevant in promoting lifelong support for Anita and her family, as illustrated in the Australian National Disability Insurance Scheme (NDIS, 2017).

All of these considerations would inform the design and implementation of a tailor-made early intervention program for Anita. The significance of biology and culture as boundaries to psychological approaches in the lives of children like Anita cannot be overestimated, and will ultimately provide us with the best solution to address the complexity of her developmental concerns.

APPLY AND DISCUSS

Patriotic feelings — deep affection for one's nation, tribe or group — are cross-culturally universal. How might psychologists from the following perspectives explain this?

- Psychodynamic
- Behaviourist
- Humanistic

- Cognitive
- Evolutionary

INTERIM SUMMARY

Although the different perspectives offer radically different ways of approaching psychology, each has made distinctive contributions. These perspectives have often developed in mutual isolation, but efforts to integrate aspects of them are likely to continue to be fruitful, particularly in clinical psychology.

1.5 Psychology in Australia and New Zealand

LEARNING OUTCOME 1.5 Discuss the educational requirements for psychologists and outline their most common work settings.

We began this chapter with a look at the history of psychology and how psychology developed from philosophy. We considered the contributions of different theoretical perspectives and showed how each approach can be used to explain human experience. Now that you are aware of where psychology came from, you can better appreciate where psychology is heading as we move further into the twenty-first century. In the following sections, we examine the educational qualifications required to become a fully registered psychologist and consider the main goals of professional associations for psychologists working in Australia and New Zealand. We will outline the major specialisations in the discipline and consider the various career options for psychology graduates. To help put you on the pathway to academic success, we will also outline some strategies to help you learn effectively. We will discuss how to better manage your time, how to prepare your study schedule, how to engage in active learning and how to prepare for exams.

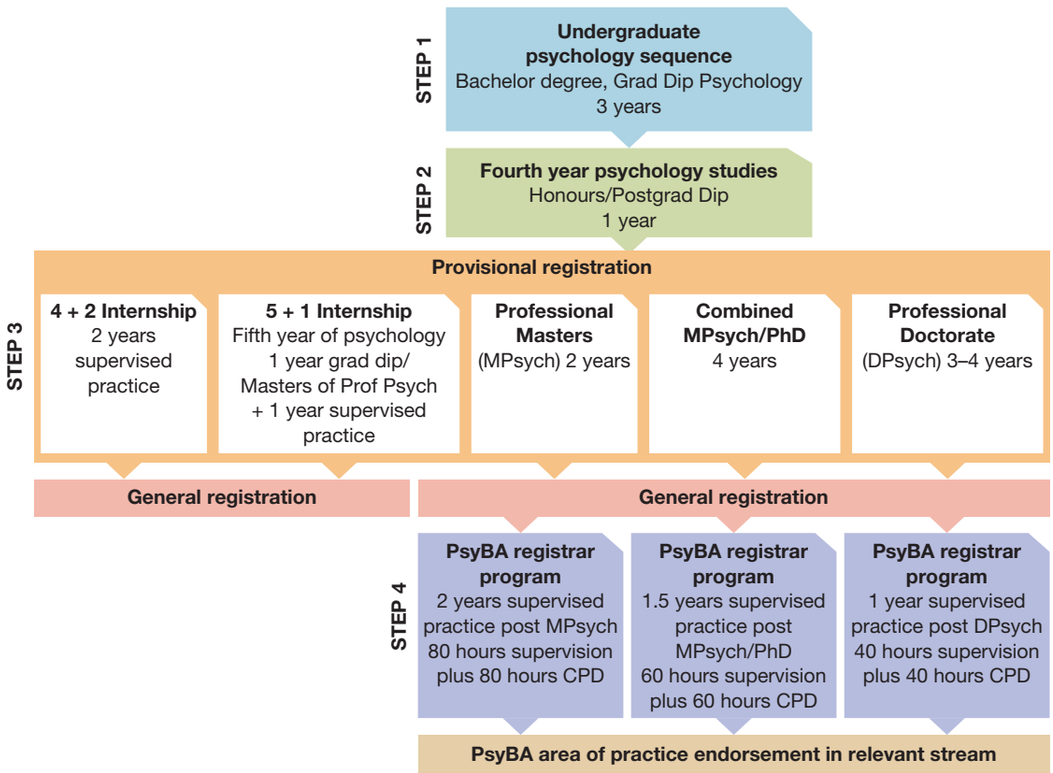
Education and training to become a psychologist

Becoming a registered psychologist able to practise in Australia takes a minimum of six years. You must first complete a university degree in psychology and then gain acceptance into an honours or postgraduate psychology program, which is a competitive process typically based on your grade point average in your undergraduate degree in psychology. Currently, registration involves a four-year Bachelor of Psychology or a three-year degree followed by an honours program, plus an additional two years of supervised practice (4 + 2 pathway) or higher degree studies in psychology. Another pathway is to complete five years of study and one additional year of supervised practice (5 + 1 pathway). Whichever pathway you choose, your program must be accredited by the Australian Psychology Accreditation Council (APAC; see APS, 2017b). Endorsement in a specialist area of practice (e.g., clinical psychology) requires you to undertake additional supervision after you finish your degree. (See the APAC website for further information: www.psychology.org.au/Training-and-careers/Careers-and-studying-psychology/studying-psychology/Study-pathways)

There has been much international pressure to review Australian psychology training to achieve global education and uniformity of registration standards for professional practice (see Littlefield, Giese, & Katsikitis, 2007 for a review). Developments in international higher education must inform any review of training requirements for psychologists in Australia (see Lipp et al., 2007). However, the APAC and the psychology profession are resolute that any pressures for change will not be to the detriment of the high standards of professional training and practice (see APS, 2016b; Grenyer, 2016; Littlefield et al., 2007). According to Cranney et al. (2009), four-year degrees in psychology develop the following graduate attributes in students: discipline knowledge, research, critical thinking, values and ethics, communication and application. Cranney, Botwood, and Morris (2012) recommended that psychological literacy — the general capacity to apply psychology to meet personal, professional and societal needs — was the key

goal of majors in the discipline. The Psychology Board of Australia (2013) implemented a national psychology examination from 1 July 2013 to ensure all aspiring psychologists possess a minimum level of knowledge of psychology (see Pelling & Burton, 2017). There is also ongoing debate about whether registrar programs (similar to those found in the medical profession) for psychology students should be introduced. Figure 1.7 shows the pathways to take in order to register as a psychologist in Australia.

FIGURE 1.7 The pathways to take in order to register as a psychologist in Australia



Source: Australian Psychological Society (2018).

To practise as a psychologist in Australia, you are legally required to be registered with the national registration scheme that came into place in 2010 (www.ahpra.gov.au/Registration.aspx), replacing the former state registration board scheme. You cannot call yourself a psychologist (or legally use the title) until you are fully registered with the national psychology board. The new national registration and accreditation system applies to 15 health professions, including psychologists. According to the National Health Workforce Taskforce (2010), this scheme enables health professionals to move around Australia more easily, provides greater safeguards for the public, and promotes a more flexible, responsive and sustainable health workforce. A revised registration standard for provisional registration and guidelines for the 4 + 2 internship program were approved by the Australian Health Workforce Ministerial Council and came into effect on 1 June 2017 (Psychology Board of Australia, 2017). These revised guidelines include an increased focus on the role of the supervisor and outcome-based, competency-based internships (see www.psychologyboard.gov.au for more information).

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. Clinical psychologists registered with the New Zealand Psychologists Board have completed a minimum of a

Masters in Psychology and a postgraduate diploma or equivalent in clinical psychology. Registration is not compulsory for other psychologists, but is highly recommended.

Under Australian and New Zealand laws, people in the same registered occupations can work and move freely between the two countries. As a result, becoming a registered psychologist in one of these countries entitles you to practise in the other.

ETHICAL DILEMMA

You have just finished a Bachelor of Psychology degree and have been accepted into an honours program for the following year. For the past three months, you have been doing volunteer counselling work at the St Vincent de Paul charity on weekends. Most of your friends think it is wonderful that you are studying psychology and often share their problems with you. One of your friends has become very depressed recently and has come to you for help.

- Are you qualified to give professional psychological advice to your depressed friend?
- What advice can you give to your friend?

The differences between psychologists and psychiatrists

People are often unsure about the differences between psychologists and **psychiatrists**, or think they are the same. The two disciplines are both concerned with mental health issues but there are important distinctions between them.

Psychology is defined as the study of human behaviour and mental processes. A key aspect of this definition is the connection between the body (human behaviour) and the mind (mental processes). **Psychologists** are concerned with why people behave the way they do — the thought processes that underpin behaviour. They base their understanding of behaviour on the results of scientific research and investigations. Broadly speaking, psychologists are interested in the thought processes that govern human behaviour in general. By contrast, psychiatrists are interested more in the narrower field of mental illness.

There are important differences in the training and qualifications needed for both disciplines. Psychiatrists are medical doctors. They first complete a general medical degree, then do further specialist study in the field of psychiatry. Because they are medical doctors, they are able to prescribe medication to treat mental illnesses. Psychologists do not have medical degrees. They typically undertake tertiary study in the field of human behaviour. After completing their studies, they then carry out a set amount of supervised work to gain registration as a qualified psychologist. Psychologists are not able to prescribe medication.

INTERIM SUMMARY

A registered **psychologist** in Australia has completed a minimum of six years' study in an APAC-accredited psychology program. Psychologists are concerned with why people behave the way they do; they study human behaviour in tertiary institutions and complete a period of supervised work to gain registration.

Psychiatrists are medical doctors who specialise in the study of psychiatry. Clinical psychologists and psychiatrists will often deal with the same types of person, but their methods of treatment will differ. Psychologists do not use medication to treat mental illnesses. In contrast, psychiatrists typically adhere to the medical model of treatment and may prescribe medication to their clients.

Major subdisciplines in psychology

Psychologists can apply their understanding of human behaviour to a wide variety of areas. A common misperception is that psychologists only treat people with mental illnesses and disorders. This is far from the truth. Much of the time, psychologists work with mentally healthy people to help them improve the way they function. This can often involve helping people to deal with stressful or difficult situations. For

example, someone might need help coping with the death of a loved one. Or an elite athlete may need help in mental preparation for an important sporting event.

However, psychologists do not just work with people one-on-one to provide counselling for their personal problems. They also deal with group processes, such as interactions in families, large companies and organisations. In these cases, psychologists help to analyse why people behave the way they do in group situations. For example, psychologists may provide counselling to a couple experiencing relationship problems. They may work with a sporting team to develop strategies for improving motivation. They may also work with companies to identify working arrangements that help staff to become more productive.

Psychologists may undertake any number of activities, including the following:

- counselling individuals, couples and groups
- administering psychological tests to assess people's thought processes and state of mind
- planning treatment programs to address problems identified
- providing services to organisations such as analysing staff morale and motivation
- assessing people's suitability for particular roles, such as job selection processes
- carrying out academic research to help better understand human thought processes
- planning programs to effect social change.

However, people who study psychology at university are not always intending to work as a psychologist. Students from a variety of other disciplines, including nursing, education, human resources, occupational therapy, physiotherapy, social work and dental therapy, may take psychology courses as electives towards their degrees. An understanding of human behaviour and thought processes can be extremely valuable to people in numerous situations and roles. Many people therefore study psychology to improve their performance in other jobs and occupations.

Within the broad discipline of psychology there are many fields of specialisation, including the relatively new fields of **conservation psychology** and positive psychology, demonstrated in the Love Your Sister campaign that opened the chapter. Different psychologists adopt different perspectives in their approach to studying human behaviour. The major subdisciplines are summarised in table 1.3.

TABLE 1.3 Major subdisciplines in psychology

Subdiscipline	Examples of questions asked
Biopsychology: investigates the physical basis of psychological phenomena such as thought, emotion and stress	How are memories stored in the brain? Do hormones influence whether an individual is heterosexual or homosexual?
Developmental psychology: studies the way thought, feeling and behaviour develop through the life span, from infancy to death	Can children remember experiences from their first year of life? Do children in daycare tend to be more or less well-adjusted than children reared at home?
Social psychology: examines interactions of individual psychology and group phenomena; examines the influence of real or imagined others on the way people behave	When and why do people behave aggressively? Can people behave in ways indicating racial prejudice without knowing it?
Clinical psychology: focuses on the nature and treatment of psychological processes that lead to emotional distress	What causes depression? What impact does childhood sexual abuse have on later functioning?
Cognitive psychology: examines the nature of thought, memory, sensation perception and language	What causes amnesia, or memory loss? How are people able to drive a car while engrossed in thought about something else?
Personality psychology: examines people's enduring ways of responding in different kinds of situations and how individuals differ in the way they tend to think, feel and behave	To what extent does the tendency to be outgoing, anxious or conscientious reflect genetic and environmental influences?

(continued)

TABLE 1.3 *(continued)*

Subdiscipline	Examples of questions asked
Industrial/organisational psychology: examines the behaviour of people in organisations and attempts to help solve organisational problems	Are some forms of leadership more effective than others? What motivates workers to do their jobs efficiently?
Educational psychology: examines psychological processes in learning and applies psychological knowledge in educational settings	Why do some children have trouble learning to read? What causes some teenagers to drop out of school?
Health psychology: examines psychological factors involved in health and disease	Are certain personality types more vulnerable to disease? What factors influence people to take risks with their health, such as smoking or not using condoms?
Counselling psychology: provides diagnosis and assessment, short- and long-term counselling and therapy to individuals, couples, families, groups and organisations	How do interests and scholastic abilities influence career decision making? How does stress affect behaviour?
Sport psychology: focuses on ways to enhance performance in individual athletes	Why do some athletes 'choke' under pressure? How can competition bring out the 'best' in an athlete?
Forensic psychology: provides services in criminal, civil and family legal contexts relevant to the prevention and treatment of criminal behaviour	How does psychological abuse suffered as a child relate to crimes committed in adulthood? Can victims of such abuse be considered psychologically unfit if they commit crimes in adulthood?
Positive psychology: examines the strengths and virtues that make individuals, organisations and communities flourish and applies this knowledge to help people thrive	What individual traits contribute to a sense of happiness and fulfilment? How do some people remain optimistic in the face of extreme hardship? What is happiness and how do we know when we are happy?
Conservation psychology: studies the reciprocal relationships between humans and nature, with a focus on changing attitudes and behaviours to encourage conservation of the environment	Why do people recycle? How can society change to help conserve the environment?
Community psychology: examines how society influences individual, groups, and organisations with a view to understanding the mental health and wellbeing of people and the community as a whole	How does intergenerational mentoring influence the wellbeing of disenfranchised youth in alternative education? How does volunteering influence the mental health and wellbeing of older people in community?

As discussed earlier in this chapter, positive psychology is an emerging field that focuses on the concepts of mental health and wellbeing, life purpose and virtues (Vella-Brodrick, 2011). Its leaders, Martin Seligman and Christopher Peterson, published a groundbreaking handbook of 24 strengths of character — or positive traits reflected in actions, thoughts and feelings — grouped into six core virtues: wisdom and knowledge; courage; humanity; justice; temperance and transcendence (Peterson & Seligman, 2004). Within a relatively short period of time, the presence of positive psychology has become quite pronounced. There are specific centres, conferences and journals in the area of positive psychology. Mainstream psychology is also starting to dedicate space and funding for work on positive constructs. For example, the APS Melbourne Branch recently funded a three-day positive psychology retreat to nurture and inspire early career researchers and practitioners to develop and engage with positive psychology initiatives (see also Seligman, 2008).

There are many applications of positive psychology in the real world, including clinical psychology and education fields (e.g., Clancy, Walker, Sutherland-Smith, & O'Connor, 2015; Norrish, Williams, O'Connor, & Robinson, 2013), places of employment (Williams, Kern, & Waters, 2015), and in various family and community programs (e.g., Marques, Pais-Ribeiro, & Lopez, 2011). Members of the general

public have also shown a keen interest in positive psychology with seminars and television programs such as 'Making Australia Happy' (broadcast on the ABC, see http://makingaustraliahappy.ac.net.au) being well received (see Grant, 2011).

Positive psychology is not without its critics, however, despite the growing empirical research support for the effects of positive interventions in clinical and educational contexts. More rigorous research is needed to establish positive psychology as a science (Rusk & Waters, 2013) and the APS has outlined specific recommendations for assimilating positive psychology with mainstream psychology to advance 'a more continuous and complete mental health practice and research in the field' (Vella-Brodrick, 2011).

ONE STEP FURTHER

The application of forensic psychology to asylum seekers' determinations

BY DAVID MUTTON, WESTERN SYDNEY UNIVERSITY

Forensic psychology is defined as '... any application of psychological knowledge or methods to a task faced by the legal system' (Wrightsman, 2001, p. 2). This definition is critical to determining how forensic psychology may apply to the study of mental processes and behaviour in contemporary real-life situations, such as an asylum application process.

In a hypothetical case, typical of those often faced by the legal system in Australia, a 28-year-old male asylum seeker, alleging persecution in his homeland, made a claim for asylum to the Australian authorities. During his protection assessment interview, inconsistencies emerged between his answers and his statements made in the original written application. For example, in his statement he wrote that his persecution began in 2009, but in his interview, he stated that it began in 2010. Inconsistencies such as these suggest questionable credibility, and therefore, his Protection Visa application was refused.

The asylum seeker's lawyer lodged an appeal against the decision with the Administrative Appeals Tribunal. A forensic psychologist was appointed to conduct a full psychological assessment of the asylum seeker in order to inform the tribunal's decision. When faced with the task of assessing whether the asylum seeker's evidence of persecution was credible or not, the forensic psychologist's diagnosis provided vital expert evidence regarding the asylum seeker's mental state, which assisted the tribunal in making the correct decision — ensuring that the asylum seeker was not returned to face persecution and potentially life-threatening circumstances.

After the psychological assessment, the forensic psychologist diagnosed the asylum seeker with post-traumatic stress disorder (PTSD) and depression, on the grounds that the asylum seeker was traumatised by witnessing the torture and execution of close family members.

The psychologist collated additional relevant research that demonstrated that memory is subject to distortion (Herlihy, Jobson, & Turner, 2012), forgetting (Rubin, Boals, & Berntsen, 2008) and the inclusion of false memories (Roediger, & McDermott, 1995), and that these effects may be exacerbated through repeated interviews (Bluck, Levine, & Laulhere, 1999). This is despite the commonly held belief that people retrieve memories in an 'accurate, consistent and reliable' manner (Herlihy, et al., 2012). Herlihy, Scragg, and Turner (2002) provide further evidence that, in the case of asylum seekers, inconsistencies increase after repeated interviews.

The psychologist added that memories are influenced by an individual's emotional state during the initial experience of an event and its later recollection. Revelle and Loftus (1992) assert that experiencing a state of high emotional arousal during an event actually reduces memory recall. Trauma memories, in particular, are vulnerable both to the level of emotional arousal experienced during traumatic events, and

to the emotional arousal experienced while recounting them. Furthermore, Fazel, Wheeler, and Danesh (2005) have demonstrated that asylum seekers frequently experience severe PTSD and depression and both psychological disorders are proven to have a detrimental effect on memory. This research applied directly to the asylum seeker, who had suffered highly emotional and distressing traumatic experiences.

In conclusion, the forensic psychologist advised there was little basis on which to discredit the asylum seeker's claims. The psychologist's expert opinion was that minor inconsistencies in the asylum seeker's testimony did not indicate a lack of credibility and they recommended that the above research be considered in determining the outcome of the asylum seeker's case. Furthermore, the psychologist stated that PTSD and depression are common among asylum seekers and, as demonstrated, both conditions distort memory and affect memory retrieval, presenting as inconsistencies between initial statements and those made at a later date. Therefore, the forensic psychologist's testimony directly challenged the notion held by policymakers that consistency equates to credibility.

Professional associations for psychologists

Both Australia and New Zealand 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. The APS (www.psychology.org.au) has more than 22 000 members. Its principal aim is to represent, promote and advance psychology within the context of improving community wellbeing and scientific knowledge. People studying in an Australian Psychology Accreditation Council (APAC)-accredited higher education course are eligible for student membership. Associate membership is available to psychology graduates with an honours degree or equivalent. Full membership typically requires completion of an accredited and approved postgraduate degree. Membership of the APS is voluntary. The APS is not involved in the registration process. Registration with the Australian Health Practitioner Registration Agency (AHPRA) — which manages the registration process for the Psychology Board of Australia — is compulsory if you want to practise psychology in Australia.

The NZPsS (www.psychology.org.nz) is the profession's peak body in New Zealand and has more than 1500 members. To be eligible for full membership you must have an honours degree or higher in psychology, an approved postgraduate degree in education, or equivalent qualifications or experience approved by the Society. People studying in an approved university course are eligible for student membership.

There are many benefits in belonging to the professional bodies that represent psychologists in Australia and New Zealand. These bodies help establish and enforce high standards for the profession. They act as the profession's peak body and speak on behalf of members to groups such as governments and the media. Membership allows you to play a part in ensuring that standards of education and conduct remain high. Membership also provides opportunities to network with other psychologists, access a wide range of resources and support services, remain up to date on the current knowledge in specialist areas and contribute to the future of the profession. Consequently, many psychologists also seek full membership of one or more of the nine colleges of the APS. Each college represents a special expertise in an area of psychology: Clinical Psychology, Clinical Neuropsychology, Community Psychology, Counselling Psychology, Educational and Developmental Psychology, Forensic Psychology, Health Psychology, Organisational Psychology, and Sports and Exercise Psychology.

The Australian Psychological Society (APS) and the New Zealand Psychological Society (NZPsS) are the peak bodies that represent psychologists in Australia and New Zealand.

INTERIM SUMMARY

There are many fields of specialisation within the discipline of psychology, including clinical psychology, developmental psychology and sport psychology, among others. Each major subdiscipline asks different questions about human behaviour. The APS and NZPsS are the peak professional bodies that represent psychologists in Australia and New Zealand. These professional associations help establish and enforce high standards in the profession.

Careers in psychology

There are a wide range of career options available to psychologists. The stereotype of a psychologist is someone who provides personal counselling to individuals in a private practice. In reality, this is only one of a huge number of roles that psychologists can play. You find psychologists working in many public and private sector organisations, such as hospitals, prisons, human resource departments, defence organisations, sporting teams, universities, job recruitment agencies, community health services and government departments.

Australians can access treatment from registered psychologists under the Medicare system.

As shown in table 1.4, the major employer of psychologists in Australia is the private sector (Graduate Careers Council of Australia, GCCA, 2009). A smaller proportion is also employed in education, government and health positions. This trend is expected to continue due to the Australian government's psychology Medicare initiative released in late 2006. This initiative allows all registered psychologists to provide services under the Medicare system, ensuring that all Australians can access effective treatment for mental health problems under the nation's health system (APS, 2006a; see also chapter 16).

Similarly, in New Zealand, clinical psychology represents one of the fastest growing fields in the discipline, with the majority of psychologists employed as clinical psychologists (Evans, 2002).

TABLE 1.4 Employment of psychologists in Australia by sector

Sector	% share 2009	% share 2015
Private	29.6	40.3
Education	18.5	18.2
Health	16.5	14.1
Government	13.2	14.1
Other	22.2	13.3

Source: Data from GCCA (2009); Australian Institute of Health and Welfare (2016).

Many people who study psychology work in jobs in which they are not called 'psychologists' but still apply the knowledge they have gained through their studies and work in psychology-related fields including counselling and business. For example, a company might employ someone with psychological qualifications as its human resources manager. You may not need to be a fully registered psychologist to work in these roles. Your preferred career future may evolve over time as your life roles change, and you will develop and strengthen existing skill and knowledge sets by expanding on your current life and professional experiences. In 2016, the APS Institute officially launched its continuing professional development (CPD) opportunities for psychologists and other health professional across Australia (see www.psychology.org.au/APSinstitute).

Each year, the Graduate Careers Council of Australia (GCCA) conducts the Graduate Destination Survey to examine the activities of new university graduates. In 2015 the survey showed that about 68 percent of psychology bachelor degree graduates seeking full-time employment had found it within four months of completing their course. This figure rises to more than 72 percent for graduates of higher research degrees (GCCA, 2015a). The median salaries for psychology bachelor degree graduates were $50 000 (GCCA, 2015b). For postgraduate diploma in psychology graduates the median salary was $75 000, for master's coursework graduates the median salary was $74 000 and for PhDs the median salary was $80 800.

The job prospects for people with psychology qualifications in Australia are good. There has been continued strong demand for psychologists in a range of different jobs. Figure 1.8 summarises the key indicators for the profession of psychology.

FIGURE 1.8 Key indicators for the profession of psychology

- There are about 23 400 people employed as psychologists in Australia.
- 62.9 percent of these people work full-time and earn on average $1934 per week (before tax).
- There is predicted moderate employment growth over the next five years.
- Job prospects for psychologists are good as there is currently a moderate level of vacancy.

Source: Australian Job Search at http://jobsearch.gov.au/joboutlook

INTERIM SUMMARY

There are a wide range of career options available to psychologists and a number of websites provide useful information about graduate destination and industry employment trends. Contemporary psychologists can work in a variety of settings, including hospitals, organisations, private practice and universities.

1.6 How to study effectively

LEARNING OUTCOME 1.6 Understand how to study effectively.

This chapter has introduced you to the major theoretical perspectives in the discipline of psychology and you have learned about the major educational qualifications required to practise as a psychologist in Australia and in New Zealand. Now let us look at how we can help you to experience academic success. The reality is that you need to perform well in your studies to be accepted into an honours program to become a psychologist. That takes hard work and commitment. The next sections will outline strategies on how to build effective study schedules that actively engage you in learning and help equip you with the skills for success. We will discuss how to develop time management skills, how to design your study schedule, how to be an active learner and how to complete assignments and prepare for exams.

Researchers have long been interested in how students go about learning, the strategies they use and why they choose particular approaches (Vermunt, 2007). Approaches to learning reflect the individual differences in strategies used to achieve a particular learning task (Diseth, 2003). The student approach to learning (SAL) tradition distinguishes between deep, surface and strategic learning approaches (see Entwistle & Peterson, 2004 for a review). A **deep learning approach** involves finding meaning in what is being studied to maximise understanding. A **surface learning approach** involves investing little time in the academic task and memorising information with rote learning. A **strategic learning approach** involves being guided by the assessment criteria and enhancing self-esteem through competition.

Research from an Australian regional university shows that successful first-year students are strategic in their approaches to learning (see Burton, Taylor, Dowling, & Lawrence, 2009). Strategic students monitor and regulate their use of time more effectively than students who apply a shallower approach (Burton et al., 2009). School leavers score highly on the surface approach, suggesting that they are more syllabus-bound and use more unrelated memorising than do non-school leavers (Entwistle & Peterson, 2004). In contrast, 'mature-age' students score higher on the strategic approach, reflecting an intention to do well in the course by organising and planning their study in response to assessment requirements and criteria. Mature-age students manage time and effort effectively (Burton et al., 2009). These findings support the view that all students should seek to develop an active interest in, and engagement with, subject material (see the *Study Guide* as a starting point for improving your understanding of the material that is covered in this text).

Developing effective time management skills

To succeed in your studies, it is critical that you manage your time effectively. For everyone, study is just one aspect of life that you must fit into often busy schedules. We all have family commitments, work commitments, sports, hobbies and social lives that demand our time. Unless you are organised, time can slip away. Unfortunately, when assignment deadlines and exams loom, there is no way to get that time back. Here are a few tips on how you can better manage the time required for your studies.

- *Plan out your semester*. Sit down at the start of term and develop a plan that will keep you on track. Mark out when assignments are due, and exams take place, so you are aware of what is ahead. Do not forget to allow for other commitments — for example, you might want to give yourself a night off on your birthday!
- *Set milestones and review your progress*. Write down where you want to be at a certain point in time — for instance, aim to have the first draft of an assignment completed within a certain week of the semester.
- *Do not procrastinate and leave things until the last minute*. End-of-semester exams may be months away but that does not mean you only start thinking of them the day before. It is impossible to make up for lost time.

- *In particular, do the toughest tasks first*. The temptation is to do all the easy things and leave the hardest ones until the end — and risk running out of time to do them properly.
- *Be realistic in the way you plan.* For instance, it is better to study for two hours a night, than to do nothing during the week and expect to spend 10 hours on Saturday making up for it.
- *Allow time for study breaks*. It is very hard to study for hours on end without a break. Do not pretend you are superhuman.
- *Prioritise where you need to spend your time.* Try to estimate the time required to complete those assessment pieces that you will be marked on. For instance, an assignment in a course that you have difficulty with may require more time than a course in which you excel.
- *Give yourself some room to move*. Do not commit every moment of your time. There will always be emergencies or unexpected diversions that threaten your schedule, so you need to have some flexibility to make adjustments.
- *Set goals and reward yourself when you achieve them*. It is always more motivating to study when there is a reward on offer.
- *Develop a routine*. Get into the habit of studying at the same time each day, so you plan other activities around it. Make sure you study in the right environment — if possible, a quiet place where you will have minimum interruptions. Trying to study in front of the television while your flatmate practises the guitar may not be the best move!
- *Break up large tasks into smaller, more achievable goals*. A major assignment may seem daunting at first, but becomes much more manageable if you plan to complete it in sections. This also helps you to set mini-deadlines and remain on track.
- *Do not spend all your time studying*. If you plan properly there will be plenty of time to socialise and enjoy yourself away from the desk. In fact, you will perform better if you have a balance in your life, so clear some time in your schedule to have some fun!

Use the above time management skills to help you to succeed in your psychology studies.

Setting a study schedule

The previous section on time management skills emphasised just how important it is for you to develop a study schedule. So, exactly how do you do that? While there is no right way to do that, here are a few ideas that might help (see the example of a weekly study schedule in the *Study Guide*, the Study Guides and Strategies website at www.studygs.net for more information).

- *Sit down at the start of the semester with a diary*. Alternatively, you could use some paper ruled up — one page for each day of each week, and each day marked off in hours.
- *Look at the assignment due dates and the exam periods*. Mark them on your schedule. Check the course materials that you have been given. They may also have suggested study schedules that give you an idea of where you need to be at any given point in the semester.
- *Next, block off the study periods that are already committed*. For example, the scheduled lectures and tutorials that you are required to attend. It is also a good idea to allow some time before and after classes to review and absorb the material.
- *Now, block off the other regular commitments you might have*. For example, regular work shifts or nights you are committed to sports training.
- *Also, mark off any other less regular or one-off commitments you might have*. The reasons can be many and varied — a trip away for a long weekend, or a loved one's birthday.
- *Now, build a regular study schedule around these commitments*. Wherever possible, make the study pattern regular so you can settle into a routine. There is more chance of sticking with a consistent schedule than doing something different every day.
- *Be realistic*. There will be times when you simply cannot stick to a schedule. Try to look ahead and see if there are times that will cause problems, and adjust your overall schedule to allow for it.
- *Spread out your studies over the available time*. Do not try to cram in long hours of hunching over the desk one night and do nothing the rest of the week.
- *Review your progress periodically*. It is important to check how you are going against you milestones and to see whether you need to adjust your schedule.
- *Also, remember to schedule some down time, when you have the chance to exercise or relax and recharge the battery*. If you have allowed for it in your overall plan, then you can enjoy a study-free weekend with no feelings of guilt!

Becoming an active learner

You may have come to study psychology straight after finishing high school, or perhaps after many years without ever touching a textbook. Whatever your background, one thing is true — as an adult learner, you are responsible for your own success. You must be proactive in becoming a self-directed learner and developing the required study skills. You will get plenty of guidance and raw information from your lecturers — but it is up to you to take control and be responsible for what you do with your learning materials.

As a student, you will be expected to read and absorb large amounts of written material. You will also sit through many lectures or listen to lots of recorded material online. It is important that you learn how to get the most out of these activities by becoming an active reader and an active listener.

Active reading

Reading through long passages about complex concepts can be taxing for anyone. Simply reading through from start to finish and then expecting to absorb the information is extremely difficult. But there are techniques you can use to help you to get the most out of reading.

One popular approach is the **SQ4R method**, which stands for survey, question, read, recite, review and write. If you *survey* (skim through a chapter, looking at headings and the summary), *question* (at the beginning of each section, turn the heading into a question), *read* (as you read, try to answer the question you posed), *recite* (mentally or orally answer your question), *review* (at the end of the chapter, recall your

questions and relate what you have learned to your real life) and *write* (as you read or listen, actively write answers to questions and take notes), you have a better chance of retaining crucial information (see chapter 7 for more information on the SQ4R method).

A good idea is to apply the SQ4R method to chunks of the reading material as you go. That is, do not wait until you get through the whole text to try to absorb all the concepts. You might review at the end of each paragraph, or section, or chapter. A useful idea is to use a pencil to tick off each paragraph once you are sure you understand its meaning. Or, once you get to the end of a chapter, you might like to close the text and jot down the key points and concepts in your own words. This is an effective way to check that you fully understand the material. Asking yourself questions is also a good way to check your comprehension. How does this material relate to other concepts you have learned? Can you apply this to your own experience? Can you think of examples that illustrate the themes? Another strategy is to chunk or group information together to facilitate comprehension and retrieval of information. You will learn more about chunking in chapter 7. Many textbooks contain study aids that are specifically designed to help you become an active learner. Look closely at this text. The authors have gone to a lot of time and trouble to include concept maps; interim summaries; 'apply and discuss' questions; 'making connections' boxes and 'from brain to behaviour' features. Make the most of them!

Active listening

Active listening skills are important to gain the most from sitting in a crowded lecture room listening to your teacher talk for an hour or so. But you can also use them in a smaller tutorial setting, while talking one-on-one with a fellow student, or when listening in to a teleconference. There are some similarities to active reading, but also some important differences.

Active listening requires that you focus your attention on the person speaking and take on board their whole message. That means not just listening but (where possible) watching closely to pick up nonverbal clues, and tuning your other senses into the situation. Even in a lecture, you can play an active part in the presentation by maintaining eye contact and providing your own nonverbal feedback to the speaker — for example, slumping your head onto the desk is not going to help you absorb what is being said; nor is it going to encourage an enthusiastic response from the lecturer. Conversely, if you do not understand something, displaying a puzzled look on your face may prompt the speaker to try a different explanation. Asking questions is also a good way to be an active listener — you can take the opportunity to check that your understanding of a topic is accurate.

In lectures, it is advisable that you take notes along the way. But do not simply try to record exactly what the lecturer has said. Jot down the key ideas and concepts in your own words. That will help you absorb the meaning and also make it easier to recall when you go back to review the notes. Lecture notes are often made available for students — a quick review of these notes before the lecture may help you to become familiar with new concepts and may prompt questions for you to ask during class.

Critical thinking

Critical thinking is an essential academic skill that helps you to interpret and evaluate the information you read in scholarly journals and books. Your studies in psychology will involve reading the work of others. It is crucial that you develop an ability to critically examine what other researchers have concluded, the evidence presented in support of those conclusions, and the methods used to obtain that evidence (Burton, 2018). According to Burton, three key principles underpin critical thinking: scepticism (not accepting an assertion as true until you have examined the evidence), objectivity (making an impartial judgement about something), and open-mindedness (considering all sides of an issue). The following guidelines will also help you to become a critical thinker.

- *Ask lots of questions.* For example, ask *why* something happens and then work to find the answers.
- *Define your key terms.* This will help keep you focused in your analysis of the information.
- *Examine the evidence available.* Is it robust and based on reliable and valid research methods?

- *Analyse the assumptions and biases that underpin an argument.* It is important to be sceptical and objective in your review of the evidence.
- *Avoid emotional reasoning.* This occurs when a person believes their emotional response proves something to be true, regardless of the observed evidence.
- *Don't oversimplify the complex or overcomplicate the simple.* Try to take a more holistic perspective in your approach and engage in reflective practice.
- *Consider other explanations.* Remember to identify and, if possible, rule out alternative explanations for the observed findings.
- *Learn to tolerate uncertainty.* Life is full of change and uncertainty is inevitable.

Successfully completing assignments

Your first assignment is due in a few weeks' time and you are feeling very nervous about how to start the assignment, let alone complete it effectively. Here are some helpful tips.

- *Ensure you understand the assignment topic.* Ask questions until you are certain of the assignment topic.
- *Create a plan that is aligned with the marking criteria.* Plan what you will write about in each paragraph, using the marking criteria as a guide for the key points to be included.
- *Stay within the word limit.* Your lecturer will always allow enough words for you to answer the assignment question. Ensure you stick to the topic and resist going off on a tangent.
- *Pay attention to spelling, grammar, punctuation and referencing.* Many students lose easy marks due to poor spelling, grammar, punctuation and referencing. Remember that electronic spelling and grammar checks might not identify all grammatical errors. Print a hard copy of your assignment and read through it carefully to help find any errors.
- *Learn from your mistakes and keep your successes in mind.* Carefully read through feedback to ensure that you do not repeat the same mistakes in your next assignment. Focus on aspects you have done well when writing your next assignment.

Effectively preparing for exams

As a student starting out on the path of tertiary education, it is guaranteed that you will be taking plenty of exams in the next few years. For some, exams are no big deal. For others, they are a bit like fingernails on a blackboard. But regardless of how you feel about them, there are a few simple tips that can help you survive and thrive in the examination environment.

Before the exam

Preparations for an exam do not start with sharpening a pencil or two the night before it takes place. Of course, the best preparation is to ensure that you have kept up with the study workload consistently throughout the semester. But you do need to do some revision, especially of the topics that you covered at the start of the course.

APPLY AND DISCUSS

One of the many ways that you can help manage your time is to create a study schedule or a 'to-do' list to prioritise your study tasks. On your university course website for this subject, you should be able to complete an exercise and create your own personal to-do list.

- What are the key tasks you need to do?
- Why is each task important to you?
- What reward would you expect after completing each task?
- What dates should each task be completed by?

About a month before the exam, sit down and draw up a revision timetable. If you are taking multiple courses, ensure that you allow for the different exam dates and adjust the revision schedule accordingly. Be smart about allocating your time — you might find some courses harder than others, so you might need to spend a bit more time on them. Look through your lecture notes, and review the key concepts in your textbooks. Take notice of any guidance that the lecturer might provide about what to concentrate on. Review past exam papers to get an idea of the type of questions to expect. If possible, get together with other students to test each other and ensure that you have not interpreted anything incorrectly.

Allow enough time to revise the work. Cramming just does not work — plus, it is extremely stressful. The night before the exam you should skim the key concepts one last time, get your pencils, pens and paper together, and get a good night's sleep. On the day of the exam, eat a decent breakfast and give yourself plenty of time to reach the venue.

During the exam

When the exam paper hits your desk, the most important thing to do is to stay calm and relaxed. Read the entire exam paper through carefully so you understand exactly what you have been asked to do. Sometimes, there are a number of sections in an exam — for example, multiple choice, short answer and/or short essay sections. Look at how the marks have been allocated and calculate how much time you should be spending on each section. There is no point spending most of your time on short answer questions if they are worth only half the marks of the multiple choice section!

There are many tips and techniques that can help you take a more systematic approach to an exam.

- *Identify the key words in the question*. They are a clue to what you need to focus on. It might help to highlight them.
- *Read the question carefully to make sure you know exactly what you are being asked to do*. For example, a request to 'analyse' topics is different to a request to 'compare' them.
- *Try not to get bogged down on questions you simply cannot answer.* If you do not know the answer, take a guess and move on. Mark the question and come back to it if time permits.

- *Maximise your marks for short answer questions*. As a general guide, discuss as many key points as there are marks allocated to the question. For example, if the question is worth three marks, try to include at least three key points in your answer.

There are also some handy techniques for multiple choice questions.

- *Try to answer the question first without looking at the choices*. Often your immediate response will be correct.
- *Take a first pass and answer the questions you are confident about*. Mark them off so you do not have to look at them again.
- *Take a second pass, and look at the choices for each question*. Immediately strike out the options you know are definitely incorrect.
- *Go back and look again at each question*. If more than one answer still seems plausible, compare them and decide which appears the most accurate.
- *Choices that offer sweeping generalisations are often incorrect*. Look for words such as 'never' or 'always' as a clue.
- *Do not leave an answer blank*. If all else fails, take a guess.

After the exam

It is common practice after an exam for students to agonise over every answer and second-guess everything they have done. But the simple truth is that worrying about it excessively is never going to change the result. What is done is done.

The best thing to do is to put the exam out of your mind. Once you have received your final grade, you can then review your performance to see whether the preparation strategy and schedule you had was appropriate or needs to be adjusted the next time an exam day looms. Good luck!

INTERIM SUMMARY

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 reader and an active listener. The **SQ4R method** will help you to chunk the reading material into key concepts. Active listening will enable you to check that your understanding of a topic is accurate. Successfully completing an assignment requires a clear understanding of the topic and marking criteria, attention to detail, and an ability to learn from feedback. Effectively preparing for the final exam involves setting up a revision timetable and applying a systematic approach to answering questions in an exam.

CENTRAL QUESTIONS REVISITED

Facts, theories and perspectives in psychology

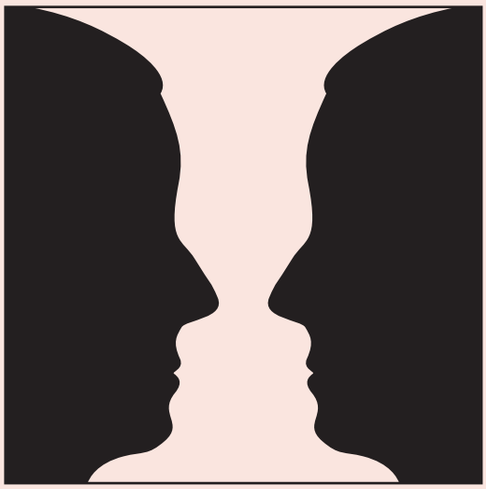
A tale is told of several blind men in India who came upon an elephant. They had no knowledge of what an elephant was and, eager to understand the beast, they reached out to explore it. One man grabbed its trunk and concluded, 'An elephant is like a snake'. Another touched its ear and proclaimed, 'An elephant is like a leaf'. A third, examining its leg, disagreed: 'An elephant', he announced, 'is like the trunk of a tree.'

Psychologists are in some ways like those blind men, struggling with imperfect instruments to try to understand the beast we call human nature, and typically touching only part of the animal while trying to grasp the whole. So why do we not just look at 'the facts', instead of relying on perspectives that lead us to grasp only the trunk or the tail? Because we are cognitively incapable of seeing reality without imposing some kind of order on what otherwise seems like chaos.

The importance of perspective can be illustrated by a simple perceptual phenomenon. Consider figure 1.9. Does it depict a vase? The profiles of two faces? The answer depends on your perspective on the whole picture. Were we not to impose some perspective on this figure, we would see nothing but patches of black and white.

This picture was used by a German school of psychology in the early twentieth century, known as **Gestalt psychology**. The Gestalt psychologists argued that perception is not a passive experience akin to taking photographic snapshots. Rather, perception is an active experience of imposing order on an overwhelming panorama of details by seeing them as parts of larger wholes (or gestalts).

FIGURE 1.9 An ambiguous figure. The indentation in the middle could be either an indentation in a vase or a nose. In science, as in everyday perception, knowledge involves understanding 'facts' in the context of a broader interpretive framework.



On simple perceptual tasks, then, the way people understand specific details depends on their interpretation of the object as a whole. This is equally true of complex scientific observations, which always occur within the context of a broader view, a theoretical perspective. We have seen earlier how each perspective offers insights into why psychologists believe what they believe.

To take a clinical example (an example from the therapeutic practice of psychology), a patient with an irrational fear, or phobia, of elevators is told by one psychologist that her problem stems from the way thoughts and feelings were connected in her mind as a child. A second psychologist informs her that her problem is a result of an unfortunate connection between something in her environment, an elevator, and her learned response — avoidance of elevators. A third — examining the data, no less — concludes that she has faulty wiring in her brain that leads to irrational anxiety.

What can we make of this state of affairs, in which experts disagree on the meaning and implications of a simple symptom? And what confidence could anyone have in seeking psychological help? The alternative is even less attractive: a psychologist with no perspective at all would be totally baffled and could only recommend to this patient that she take the stairs. Perspectives are like imperfect lenses through which we view some aspect of reality. Often they are too convex or too concave, leaving their wearers blind to data on the periphery of their understanding. Without them, however, we are totally blind.

SUMMARY

1.1 Define psychology.

- **Psychology** is the scientific investigation of mental processes and behaviour. Understanding a person means practising 'triple book-keeping' — simultaneously examining the person's biological make-up, psychological experience and functioning, and cultural and historical moment.

1.2 Discuss the contributions of biopsychology.

- **Biopsychology** (or **behavioural neuroscience**) examines the physical basis of psychological phenomena such as motivation, emotion and stress. **Cross-cultural psychology** tests psychological hypotheses in different cultures. Biology and culture form the boundaries, or constraints, within which psychological processes operate.

1.3 Outline the history of psychology.

- A classic question inherited from philosophy is whether human action is characterised by **free will** or **determinism** — that is, whether people freely choose their actions or whether behaviour follows lawful patterns. A related issue is the **mind–body problem** — the question of how mental and physical events interact.
- The field of psychology began in the late nineteenth century as experimental psychologists attempted to wrest questions about the mind from philosophers. Most shared a strong belief in the scientific method as a way of avoiding philosophical debates about the way the mind works. Among the earliest schools of thought were structuralism and functionalism. **Structuralism**, developed by Edward Titchener, attempted to use introspection to uncover the basic elements of consciousness and the way they combine with one another into ideas (i.e., the structure of consciousness). **Functionalism** looked for explanations of psychological processes in their role, or function, in helping the individual adapt to the environment.

1.4 Distinguish among the major theoretical perspectives in psychology.

- A **paradigm** is a broad system of theoretical assumptions that a scientific community uses to make sense of a domain of experience. Psychology lacks a unified paradigm but has a number of schools of thought, or **perspectives**, which are broad ways of understanding psychological phenomena. A psychological perspective, like a paradigm, includes theoretical propositions, shared metaphors and accepted methods of observation.
- The **psychodynamic perspective** originated with Sigmund Freud. From a psychodynamic perspective, most psychological processes that guide behaviour are unconscious. Thus, consciousness is like the tip of an iceberg. Because a primary aim is to interpret the meanings or motives of human behaviour, psychodynamic psychologists have relied primarily on case study methods, although ongoing efforts to apply more rigorous methods to psychodynamic concepts are likely to prove fruitful in integrating these concepts into scientific psychology.
- The **behaviourist perspective** focuses on the relation between environmental events (or **stimuli**) and the responses of the organism. Skinner proposed that all behaviour can ultimately be understood as learned responses and that behaviours are selected on the basis of their consequences. A primary metaphor underlying behaviourism is the machine; many behaviourists also consider the 'mind' to be an unknowable black box because its contents cannot be studied scientifically. The primary method of behaviourists is laboratory experimentation.
- The **humanistic perspective** emphasises the uniqueness of the individual and focuses on the person's immediate experience. According to this perspective, people are motivated to achieve personal goals so that they can fulfil their true potential. As a result, humanistic methods typically focus on helping individuals to understand their own unique frame of reference and work towards achieving **self-actualisation**, defined as the fulfilment of the whole range of needs.

- The **cognitive perspective** focuses on the way people process, store and retrieve information. **Information processing** refers to taking input from the environment and transforming it into meaningful output. A metaphor underlying the cognitive perspective is the mind as a computer, complete with software. In recent years, however, many cognitive psychologists have used the brain itself as a metaphor for the way mental processes operate.
- The **evolutionary perspective** argues that many human behavioural proclivities exist because they helped our ancestors survive and produce offspring that would be more likely to survive. **Natural selection** is the mechanism by which natural forces select traits in organisms that help them thrive in their environment. The basic notion of evolutionary theory is that evolution selects organisms that maximise their **reproductive success**, defined as the capacity to survive and reproduce, and maximise the reproductive success of genetically related individuals. The primary methods are deductive and comparative, although evolutionary psychologists are increasingly relying on experimental methods.
- Although the five major perspectives largely developed independently, each has made distinctive contributions.

1.5 Discuss the educational requirements for psychologists and outline their most common work settings.

- You must register with a psychologists' registration board to practise as a psychologist in Australia and New Zealand. The career prospects for psychologists are very good. Psychologists work in a variety of settings, including health and community services, education, government administration and private practice. The vast majority of psychologists have chosen to become members of the peak bodies that represent psychologists, to help establish and enforce high standards in the profession.

1.6 Understand how to study effectively.

- You need to perform well in your undergraduate studies to be accepted into an honours program to become a psychologist. Realising this goal takes hard work and commitment. Managing your time effectively, and preparing well for exams, are both extremely important if you are to be successful in your studies. As an adult learner, you are responsible for your own success. If you want to succeed, you need to be proactive in becoming a self-directed learner and developing the required study skills, which include active learning and active reading skills.
- Approaches to learning reflect the individual differences in strategies used to achieve a particular learning task. A **deep learning approach** involves finding meaning in what is being studied to maximise understanding. A **surface learning approach** involves investing little time in the academic task and memorising information with rote learning. A **strategic learning approach** involves being guided by the assessment criteria and enhancing self-esteem through competition. Strategic students monitor and regulate their use of time more effectively than students who apply a shallower approach to learning. Recent research shows that successful first-year students are strategic in their approaches to learning. These students intend to succeed and are motivated to obtain the best possible mark by effectively organising their study time and learning environments.

KEY TERMS

adaptive traits A term applied to traits that help organisms adjust to their environment.

behavioural genetics A field that examines the genetic and environmental bases of differences among individuals on psychological traits.

behaviourism See behaviourist perspective.

behaviourist or **behavioural perspective** The perspective pioneered by John Watson and B. F. Skinner, which focuses on the relationship between observable behaviours and environmental events or stimuli; also called behaviourism.

biopsychology or **behavioural neuroscience** The field of investigation that examines the physical basis of psychological phenomena such as motivation, emotion and stress; also called behavioural neuroscience.

Cartesian dualism The doctrine of dual spheres of mind and body.

cognition Thought and memory.

cognitive perspective A psychological perspective that focuses on the way people perceive, process and retrieve information.

conservation psychology The study of the reciprocal relationships between humans and nature, with a focus on changing attitudes and behaviours to encourage conservation of the environment.

critical thinking A skill that involves carefully examining and analysing information to judge its value, assessing both its strengths and its weaknesses, and considering alternative explanations.

cross-cultural psychology The field that attempts to test psychological hypotheses in different cultures.

deep learning approach Involves finding meaning in what is being studied to maximise understanding.

empathy The capacity to understand another person's experience, both cognitively and emotionally.

empiricism The belief that the path to scientific knowledge is systematic observation and, ideally, experimental observation.

ethology The field that studies animal behaviour from a biological and evolutionary perspective.

evolutionary perspective The viewpoint built on Darwin's principle of natural selection that argues that human behavioural proclivities must be understood in the context of their evolutionary and adaptive significance.

evolutionary psychologists Apply evolutionary thinking to a wide range of psychological phenomena.

falsifiability criterion The assertion that when researchers are testing hypotheses, they must frame them in such a way as to allow for them to be proven false, and that if this does indeed occur, then a logical result is that the theory on which the hypothesis is based must be modified or developed in some way so as to become closer to the truth.

free will or **determinism** The philosophical question of whether people act on the basis of their freely chosen intentions, or whether their actions are caused or determined by physical processes in their bodies or in the environment in which they live.

functionalism An early school of thought in psychology influenced by Darwinian theory that looked for explanations of psychological processes in terms of their role, or function, in helping the individual adapt to the environment.

Gestalt psychology A school of psychology that holds that perception is an active experience of imposing order on an overwhelming panorama of details by seeing them as parts of larger whole (or Gestalts).

humanistic perspective An approach to personality that focuses on aspects of personality that are distinctly human, not shared by other animals.

ideal self A person's view of what she or he would like to be.

inclusive fitness The notion that natural selection favours organisms that survive, reproduce and foster the survival and reproduction of their kin.

information processing The transformation, storage and retrieval of environmental inputs through thought and memory.

introspection The method used by Wundt and other structuralists in which trained participants verbally reported everything that went through their minds when presented with a stimulus or task; more generally, refers to the process of looking inward at one's own mental contents or process.

localisation of function The extent to which different parts of the brain control different aspects of functioning.

mind–body problem The question of how mental and physical events interact.

natural selection A theory proposed by Darwin which states that natural forces select traits in organisms that help them adapt to their environment.

nature–nurture controversy The question of the degree to which inborn biological processes or environmental events determine human behaviour.
paradigm A broad system of theoretical assumptions employed by a scientific community to make sense out of a domain of experience.
person-centred Carl Rogers' therapeutic approach that focuses on the individual's phenomenal world.
perspectives Broad ways of understanding psychological phenomena, including theoretical propositions, shared metaphors and accepted methods of observation.
positive psychology The focus on understanding and harnessing positive emotions and actively stimulating conditions that produce valued, subjective experiences that help people flourish.
psychiatrists Specialists who have medical degrees and prescribe medication to treat mental illness.
psychodynamic perspective The perspective initiated by Sigmund Freud that focuses on the dynamic interplay of mental forces.
psychodynamics A view analogous to dynamics among physical forces in which psychological forces such as wishes, fears and intentions have a direction and an intensity.
psychological anthropologists People who study psychological phenomena in other cultures by observing people in their natural settings.
psychologists Professionals who examine why people behave the way they do; they consider the thought processes that underpin behaviour.
psychology The scientific investigation of mental processes and behaviour.
rationalist philosophers Philosophers who emphasise the role of reason in creating knowledge.
reproductive success The capacity to survive and produce offspring.
self-actualisation People are motivated to fulfil the whole range of needs that humans experience.
self-concept An organised pattern of thought and perception about oneself.
sociobiology A field that explores possible evolutionary and biological bases of human social behaviour.
SQ4R method A mnemonic device designed to help students remember material from textbooks, which includes six steps: survey, question, read, recite, review and write.
stimuli Objects or events in the environment that elicit a response in an organism.
strategic learning approach Involves being guided by the assessment criteria and enhancing self-esteem through competition.
structuralism An early school of thought in psychology developed by Edward Titchener, which attempted to use introspection as a method for uncovering the basic elements of consciousness and the way they combine with each other into ideas.
surface learning approach Involves investing little time in the academic task and memorising information with rote learning.

REVIEW QUESTIONS

1. Define structuralism and explain how it differs from functionalism.
2. Describe the key premises of the psychodynamic perspective.
3. Compare and contrast the major contributions of the behaviourist and cognitive perspectives.
4. Describe the role of self-actualisation in the humanistic perspective.
5. Describe the basic premise of the evolutionary perspective.

DISCUSSION QUESTIONS

1. Comment on the philosophical issue 'free will versus determinism'. Do people make free choices or are their actions determined by forces outside of their control?

2 Outline the most important figures in the history of psychology.
3 There are many competing theoretical perspectives in psychology. Which one is right?

APPLICATION QUESTIONS

1 Outline the benefits to be gained from membership of professional associations such as the Australian Psychological Society (APS) or the New Zealand Psychological Society (NZPsS).
2 Outline the current career prospects for psychologists in Australia and New Zealand.

The solutions to the application questions can be found in the appendix.

WEBSITES

1 The Australian Psychological Society (APS): www.psychology.org.au
2 The New Zealand Psychological Society (NZPsS): www.psychology.org.nz
3 The Australian Psychology Accreditation Council (APAC): www.psychologycouncil.org.au
4 The New Zealand Psychologists Board: www.psychologistsboard.org.nz

REFERENCES

Adams, H. E., Wright, L. W., & Lohr, B. A. (1996). Is homophobia associated with homosexual arousal? *Journal of Abnormal Psychology*, *105*, 440–445.

Agustín-Pavón, C., Braesicke, K., Shiba, Y., Santangelo, A. M., Mikheenko, Y., Cockroft, G., … Roberts, A. C. (2012). Lesions of ventrolateral prefrontal or anterior orbitofrontal cortex in primates heighten negative emotion. *Biological Psychiatry*, *72*(4), 266–272. doi: 10.1016/j.biopsych.2012.03.007

Anderson, J. (1983). *The architecture of cognition*. Cambridge, MA: Harvard University Press.

Andrew, D. H., & Dulin, P. L. (2007). The relationship between self-reported health and mental health problems among older adults in New Zealand: Experiential avoidance as a moderator. *Aging and Mental Health*, *11*(5), 596–603.

Australian Institute of Health and Welfare. (2016). *Mental health services in Australia*: *Registered psychologist workforce*. Retrieved from https://mhsa.aihw.gov.au/Resources_Topics/Labour_force/Registered_psychologist_workforce

Australian Psychological Society. (2006a). *Medicare announcement of new psychology items heralds new era for mental health services in Australia*. Retrieved from www.psychology.org.au/news/media_releases/10.1_171.asp

Australian Psychological Society. (2016b). Psychology education and training. *InPsych*, *38*(2). Retrieved from www.psychology.org.au/inpsych/2016/april

Australian Psychological Society. (2017a). *Positive psychology overview*. Retrieved from http://eqip.psychology.org.au/practitioner-tools/positive-psychology

Australian Psychological Society. (2017b). *Study pathways*. Retrieved from www.psychology.org.au/studentHQ/studying/study-pathways

Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*, 191–215.

Bandura, A. (1977b). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1999). Social cognitive theory of personality. In L. Pervin & O. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 154–196). New York, NY: Guilford Press.

Bargh, J. A., & Morsella, E. (2008). The unconscious mind. *Perspectives on Psychological Science*, *3*(1), 73–79.

Bassett, D. D., & Gazzaniga, M. S. (2011). Understanding complexity in the human brain. *Trends in Cognitive Sciences*, *15*(5), 200–209. https://doi.org/10.1016/j.tics.2011.03.006

Biblarz, T. J., & Stacey, J. (2010). How does the gender of parents matter? *Journal of Marriage and Family*, *72*(1), 3–22.

Bishop, J. A., & Cook, L. M. (1975). Moths, melanism and clean air. *Scientific American*, *232*, 90–99.

Blacher, J., Begum, G. F., Marcoulides, G. A., & Baker, B. L. (2013). Longitudinal perspectives of child positive impact on families: Relationship to disability and culture. *American Journal on Intellectual and Developmental Disabilities*, *118*(2), 141–155.

Blair, R. J., Peschardt, K. S., Budhani, S., Mitchell, D. G., & Pine, D. S. (2006). The development of psychopathology. *Journal of Child Psychology and Psychiatry*, *47*(3–4), 262–275.

Blandt, C. W. (2002). Towards a psychodynamic understanding of binge drinking in first-semester college freshmen. *Journal of College Student Development*, *43*, 775–791.

Bluck, S., Levine, L. J., & Laulhere, T. M. (1999). Autobiographical remembering and hypermnesia: A comparison of older and younger adults. *Psychology and Aging*, *14*(4), 671. doi: 10.1037/0882-7974.14.4.671

Boon, S. D., & Brussoni, M. J. (1996). Young adults' relationships with their 'closest' grandparents: Examining emotional closeness. *Journal of Social Behavior & Personality*, *11*, 1–14.

Bornstein, R. F. (2005). Reconnecting psychoanalysis to mainstream psychology. Challenges and opportunities. *Psychoanalytic Psychology*, *22*(3), 323.

British Psychoanalytic Council. (2017). *Research and evidence*. Retrieved from www.bpc.org.uk/about-psychotherapy/evidence

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage Publications.

Bruyer, R. (1991). Covert face recognition in prosopagnosia: A review. *Brain and Cognition*, *15*, 223–235.

Burgess, N., & Hitch, G. J. (1999). Memory for serial order: A network model of the phonological loop and its timing. *Psychological Review*, *106*, 551–581.

Burton, L. J. (2018). *An interactive approach to writing essays and research reports in psychology* (4th ed.). Milton, Australia: Wiley.

Burton, L. J., Taylor, J. A., Dowling, D. G., & Lawrence, J. (2009). Learning approaches, personality and concepts of knowledge of first-year students: Mature-age versus school leaver. *Studies in Learning, Evaluation, Innovation and Development*, *6*(1), 65–81. Retrieved from http://sleid.cqu.edu.au

Buss, D. M. (1991). Evolutionary personality psychology. *Annual Review of Psychology*, *42*, 459–492.

Buss, D. M. (2000). The evolution of happiness. *American Psychologist*, *55*, 15–23.

Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science*, *3*, 251–255.

Calkin, A. B. (2002). Inner behavior: Empirical investigations of private events. *The Behavior Analyst*, *25*(2), 255–259.

Cantor, N., & Kihlstrom, J. F. (1987). *Personality and social intelligence*. Englewood Cliffs, NJ: Prentice-Hall.

Cave, C. B. (1997). Long-lasting priming in picture naming. *Psychological Science*, *8*, 322–325.

Clancy, E., Walker, A., Sutherland-Smith, W., & O'Connor, M. (2015). *Exploring staff experiences of positive education*. Melbourne, Australia: Positive Education Research.

Cohen, D., Milman, D., Venturyera, V., & Falissard, B. (2011). Psychodynamic experience enhances recognition of hidden childhood trauma. *PLoS One*, *6*(4), e18470.

Combs, A., Krippner, S., & Taylor, E. (2010). Is there awareness outside attention? A psychological perspective. *Journal of Consciousness Studies*, *17*(11–12), 100–115.

Cranney, J., Botwood, L., & Morris, S. (2012). *National standards for psychological literacy and global citizenship: Outcomes of undergraduate psychology education. 2012 final report OLT fellowship*. Retrieved from https://groups.psychology.org.au/Assets/Files/Cranney_NTF_Final_Report_231112_Final_pdf.pdf

Cranney, J., Turnbull, C., Provost, S. C., Martin, F., Katsikitis, M., White, F. A., … Varcin, K. J. (2009). Graduate attributes of the 4-year Australian undergraduate psychology program. *Australian Psychologist*, *44*(4), 253–262.

Daly, M., & Wilson, M. (1988). Evolutionary social psychology and family homicide. *Science*, *242*, 519–524.

Darwin, C. (1859). *The origin of species by means of natural selection, or, the preservation of favoured races in the struggle for life*. London, UK: John Murray.

Davis, E. L., Levine, L. J., Lench, H. C., & Quas, J. A. (2010). Metacognitive emotion regulation: Children's awareness that changing thoughts and goals can alleviate negative emotions. *Emotion. 10*(4), 498–510.

DeKay, T. (1998). *An evolutionary-computational approach to social cognition: Grandparental investment as a test case*. Unpublished doctoral dissertation, University of Michigan, Ann Arbor.

Diseth, A. (2003). Personality and approaches to learning as predictors of academic achievement. *European Journal of Personality*, *17*, 143–155.

Dvorsky, G. (2013). *Why Freud still matters, when he was wrong about almost everything*. Retrieved from http://io9.gizmodo.com/why-freud-still-matters-when-he-was-wrong-about-almost-1055800815?IR=T

Entwistle, N. J., & Peterson, E. R. (2004). Conception of learning and knowledge in higher education — relationships with study behaviour and influences of learning environments. *International Journal of Educational Research*, *41*, 407–428.

Erikson, E. (1963). *Childhood and society*. New York, NY: W. W. Norton.

Esquivel, G. B. (2003). Perspectives on creativity. In J. Houtz (Ed.), *The educational psychology of creativity* (pp. 13–22). Cresskill, NJ: Hampton Press.

Euler, H. A., & Weitzel, B. (1996). Discriminative grandparental solicitude as reproductive strategy. *Human Nature*, *7*, 39–59.

Evans, I. M. (2002). Clinical psychology in early 21st century Aotearoa/New Zealand: Introduction to the special issue. *New Zealand Journal of Psychology*, *31*, 50–52.

Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 7000 refugees resettled in western countries: A systematic review. *Lancet*, *365*(9567), 1309–1314. doi: 10.1016/S0140-6736(05)61027-6

Fonagy, P. (2003). Psychoanalysis today. *World Psychiatry*, *2*(2), 73–80.
Gardner, H. (1985). *The mind's new science: A history of the cognitive revolution*. New York, NY: Basic Books.
Gaskin, C. (2014). *The effectiveness of psychoanalysis and psychoanalytic psychotherapy: A literature review of recent international and Australian research*. Melbourne, Australia: PACFA.
Graduate Careers Council of Australia. (2009). *Psychology bachelor*. Retrieved from http://svc071.wic016v.server-web.com/GraDSOnline/fos/fos.asp?YR=2007&DL=2&FS=56&SS=
Graduate Careers Council of Australia. (2015a). *Graduate destinations 2015*. Retrieved from www.graduatecareers.com.au/wp-content/uploads/2016/07/Graduate-Destinations-Report-2015-FINAL1.pdf
Graduate Careers Council of Australia. (2015b). *Graduate salaries 2015*. Retrieved from www.graduatecareers.com.au/wp-content/uploads/2016/07/Graduate-Salaries-Report-2015-FINAL1.pdf
Grant, A. M. (2011). Reality TV gets positive: Psychological reflections on Making Australia Happy. *International Coaching Psychology Review*, *6*(2), 229.
Grenyer, B. F. S. (2016). The five steps to reform of training and education in psychology. *InPsych*, *30*(2), 18. Retrieved from www.psychology.org.au/inpsych/2016/april/granyer
Hamilton, W. D. (1964). The genetical theory of social behavior. *Journal of Theoretical Biology*, *6*, 1–52.
Herlihy, J., Jobson, L., & Turner, S. (2012). Just tell us what happened to you: Autobiographical memory and seeking asylum. *Applied Cognitive Psychology*, *26*(5), 661–676. doi: 10.1002/acp.2852
Herlihy, J., Scragg, P., & Turner, S. (2002). Discrepancies in autobiographical memories — Implications for the assessment of asylum seekers: repeated interviews study. *British Medical Journal*, *324*(7333), 324. doi: 10.1136/bmj.324.7333.324
Hinde, R. (1982). *Ethology: Its nature and relations with other sciences*. New York, NY: Oxford University Press.
Hughes-Scholes, C. H., Gavidia-Payne, S., Davis, K., & Mahar, N. (2017). Eliciting family concerns and priorities through the routines-based interview. *Journal of Intellectual & Developmental Disability*. doi: 10.3109/13668250.2017.1326591
James, W. (1890). *Principles of psychology: Vol. 1*. New York, NY: Henry Holt.
Kapitza, K. P., Passie, T., Bernateck, M., & Karst, M. (2010). First non-contingent respiratory biofeedback placebo versus contingent biofeedback in patients with chronic low back pain: A randomized, controlled, double-blind trial. *Applied Psychophysiology and Biofeedback*, *35*(3), 207–217.
Kleim, J. A. (2011). Neural plasticity and neurorehabilitation: Teaching the new brain old tricks. *Journal of Communication Disorders*, *44*(5), 521–528.
Kuhn, T. S. (1970). *The structure of scientific revolutions* (2nd ed.). Chicago, IL: University of Chicago Press.
Lalor, D. (2002). *A memory scanning study*. Unpublished manuscript, University of Southern Queensland, Australia.
Lazarus, R. S. (1999a). *Stress and emotion: A new synthesis*. New York, NY: Springer.
Lazarus, R. S. (1999b). The cognition-emotion debate: A bit of history. In T. Dalgleish & M. Power (Eds.), *The handbook of cognition and emotion* (pp. 3–20). New York, NY: John Wiley & Sons.
Lipp, O. V., Terry, D. J., Chalmers, D., Bath, D., Hannan, G., Martin, F., Provost, S. C. (2007). *Teaching psychology: Learning outcomes and curriculum development in psychology*. Strawberry Hills, Australia: The Carrick Institute for Learning and Teaching in Higher Education.
Littlefield, L., Giese, J., & Katsikitis, M. (2007, April). Special report. Professional psychology training under review. *InPsych*, *29*(2), 6–13.
Loehlin, J. (1992). *Genes and environment in personality development*. New York, NY: Guilford Press.
Lopez, S. (2009). Memorium: Remembering C. R. Snyder: A humble legacy of hope. In C. R. Snyder & S. J. Lopez (Eds.), *Oxford handbook of positive psychology* (pp. xxvii–xxix). New York, NY: Oxford University Press.
Lorenz, K. (1979). *King Solomon's ring*. New York, NY: Harper-Collins.
Marques, S. C., Pais-Ribeiro, J., & Lopez, S. J. (2011). The role of positive psychology constructs in predicting mental health and academic achievement in children and adolescents: A two-year longitudinal study. *Journal of Happiness Studies*, *12*(6), 1049–1062.
Martens, W. H. (2000). Antisocial and psychopathic personality disorders: Causes, course, and remission — a review article. *International Journal of Offender Therapy and Comparative Criminology*, *44*(4), 406–430.
Martinez, J. L., & Derrick, B. E. (1996). Long-term potentiation and learning. *Annual Review*, *47*, 173–203.
Maslow, A. H. (1962). *Toward a psychology of being*. Princeton, NJ: Van Nostrand.
McClelland, J. L. (1995). Constructive memory and memory distortions: A parallel-distributed processing approach. In D. L. Schacter (Ed.), *Memory distortions: How minds, brains, and societies reconstruct the past* (pp. 69–90). Cambridge, MA: Harvard University Press.
Medin, D. L., & Heit, E. (1999). Categorization. In B. M. Bly & D. E. Rumelhart (Eds.), *Cognitive science: Handbook of perception and cognition* (2nd ed., pp. 99–143). San Diego, CA: Academic Press.
Meezan, W., & Rauch, J. (2005). Gay marriage, same-sex parenting, and America's children. *The Future of Children*, *15*(2), 97–113.
Mischel, W. (1990). Personality dispositions revisited and revised: A view after three decades. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 111–134). New York, NY: Guilford.

Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, *102*, 246–268.
National Disability Insurance Scheme. (2017). *What is the NDIS*? Retrieved from www.ndis.gov.au/about-us/what-ndis.html
National Health Workforce Taskforce. (2010). *National registration and accreditation scheme*. Retrieved from www.ahwo.gov.au/natreg.asp
National Scientific Council on the Developing Child. (2007). *The timing and quality of early experiences combine to shape brain architecture: Working paper no. 5*. Retrieved from http://developingchild.harvard.edu/wp-content/uploads/2007/05/Timing_Quality_Early_Experiences-1.pdf
Nestoriuc, Y., Martin, A., Rief, W., & Andrasik, F. (2008). Biofeedback treatment for headache disorders: A comprehensive efficacy review. *Applied Psychophysiology and Biofeedback*, *33*(3), 125–140.
news.com.au. (2017). Connie Johnson halts cancer treatment. Retrieved from www.news.com.au/lifestyle/health/health-problems/no-more-connie-johnson-halts-her-breast-cancer-treatment/news-story/f3e67b65c23acfe8136c64744f49ab01
Norrish, J. M., Williams, P., O'Connor, M., & Robinson, J. (2013). An applied framework for positive education. *International Journal of Wellbeing*, *3*(2), 147–161.
Palomba, D., Ghisi, D., Scozzari, S., Sarlo, M., Bonso, E., Dorigatti, E., & Palatini, P. (2011). Biofeedback-assisted cardiovascular control in hypertensives exposed to emotional stress: A pilot study. *Applied Psychophysiology and Biofeedback*, *36*(3), 185–192.
Pelling, N. J., & Burton, L. J. (2017). (Eds.). *The elements of applied psychological practice in Australia: Preparing for the national psychology exam*. New York, NY: Routledge.
Peterson, C., & Seligman, M. E. P. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press and Washington, DC: American Psychological Association.
Plomin, R., DeFries, J. C., McClearn, G. E., & Rutter, R. (1997). *Behavioral genetics* (3rd ed.). New York, NY: Freeman.
Psychology Board of Australia. (2013). *Guidelines for the national psychology examination*. Melbourne, Australia: Australian Health Practitioner Regulation Agency. Retrieved from www.psychologybaord.gov.au/Standards-and-Guidelines/Codes-Guidelines-Policies.aspx
Psychology Board of Australia. (2017, March). *Connections*, Issue 19. Retrieved from www.psychologyboard.gov.au/News/Newsletters/March-2017.aspx#revised
Rafalovich, A. (2001). Psychodynamic and neurological perspectives on ADHD: Exploring strategies for defining a phenomenon. *Journal for the Theory of Social Behaviour*, *31*, 397–418.
Revelle, W., & Loftus, D. A. (1992). The implications of arousal effects for the study of affect and memory. In S-Å. Christianson (Ed.). *The handbook of emotion and memory: Research and theory* (pp. 113–149). Hillsdale, NJ: Lawrence Erlbaum Associates Inc.
Roediger, H. L., & McDermott, K. B. (1995). Creating false memories: Remembering words not presented in lists. *Journal of Experimental psychology: Learning, Memory, and Cognition*, *21*(4), 803–814. doi: 10.1037/0278-7393.21.4.803
Rogers, C. (1959). A theory of therapy, personality, and interpersonal relationships, as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: A study of a science: Vol. 3*. New York, NY: McGraw-Hill.
Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs* (Whole No. 609).
Rotter, J. B. (1990). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist*, *45*, 489–493.
Rubin, D. C., Boals, A., & Berntsen, D. (2008). Memory in posttraumatic stress disorder: properties of voluntary and involuntary, traumatic and nontraumatic autobiographical memories in people with and without posttraumatic stress disorder symptoms. *Journal of Experimental Psychology: General*, *137*(2008), 591.
Rudebeck, P. H., Saunders, R. C., Prescott, A. T., Chau, L. S., & Murray, E. A. (2013). Prefrontal mechanisms of behavioral flexibility, emotion regulation and value updating. *Nature Neuroscience*, *16*(8), 1140–1145. http://doi.org/10.1038/nn.3440
Rusk, R. D., & Waters, L. E. (2013). Tracing the size, reach, impact, and breadth of positive psychology. *The Journal of Positive Psychology*, *8*(3), 207–221.
Seligman, M. E. (2008). Positive education and the new prosperity: Australia's edge. *Education Today*, *8*(3), 20–21.
Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*, 5–14.
Shi, Z., Bureau, J., Easterbrooks, M. A., Zhao, X., & Lyons-Ruth, K. (2012). Childhood maltreatment and prospectively observed quality of early care as predictors of antisocial personality disorder features. *Infant Mental Health Journal*, *33*(1), 55–69.
Shiba, Y., Kim, C., Santangelo, A. M., & Roberts, A. C. (2014). Lesions of either anterior orbitofrontal cortex or ventrolateral prefrontal cortex in marmoset monkeys heighten innate fear and attenuate active coping behaviors to predator threat. *Frontiers in Systems Neuroscience*, *8*, 250. http://doi.org/10.3389/fnsys.2014.00250
Siegel, D. J. (2012). *The developing mind: How relationships and the brain interact to shape who we are* (2nd ed.). New York, NY: Guilford Press.
Singh, S., & Mishra, R. C. (2011). Emotion regulation strategies and their implications for well-being. *Social Science International*, *27*(2), 179–198.
Skinner, B. F. (1990). Can psychology be a science of the mind? *American Psychologist*, *45*, 1206–1210.

Slipp, S. (2000). Subliminal stimulation research and its implications for psychoanalytic theory and treatment. *Journal of the American Academy of Psychoanalysis*, *28*(2), 305–320.
Smith, E. E. (1995). Concepts and categorization. In E. E. Smith & D. N. Osherson (Eds.), *Thinking: An invitation to cognitive science: Vol. 3* (2nd ed., pp. 3–33). Cambridge, MA: MIT Press.
Sorrentino, R. M., & Higgins, E. T. (Eds.). (1996). *Handbook of motivation and cognition: Vol. 3. The interpersonal context*. New York, NY: Guilford Press.
Sternberg, S. (1975). Memory scanning: New findings and current controversies. *Quarterly Journal of Experimental Psychology*, *27*, 1–32.
Tasker, (2010). Same-sex parenting and child development: Reviewing the contribution of parental gender. *Journal of Marriage and Family*, *72*(1), 35–40.
Tavris, C., & Wade, C. (2001). *Psychology in perspective*. Upper Saddle River, NJ: Prentice-Hall.
Tooby, J., & Cosmides, L. (1992). The psychological foundations of culture. In J. H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 19–136). New York, NY: Oxford University Press.
Vella-Brodrick, D. A. (2011). Positive psychology: Reflecting on the past and projecting into the future. *InPsych: The Bulletin of the Australian Psychological Society Ltd*, *33*(2), 10.
Vermunt, J. D. (2007). The power of teaching–learning environments to influence student learning [Monograph]. *British Journal of Educational Psychology*, *4*, 73–90.
Watson, J. (1925). *Behaviorism*. New York, NY: W. W. Norton, 1970.
Weinberger, D. A. (1990). The construct validity of the repressive coping style. In J. L. Singer (Ed.), *Repression and dissociation: Implications for personality, psychopathology and health*. Chicago, IL: University of Chicago Press.
Westen, D. (1998). The scientific legacy of Sigmund Freud: Toward a psychodynamically informed psychological science. *Psychological Bulletin*, *124*, 333–371.
Westen, D. (1999). The scientific status of unconscious processes: Is Freud really dead? *Journal of the American Psychoanalytic Association*, *47*(4), 1061–1106.
Westen, D., & Gabbard, G. (1999). Psychoanalytic approaches to personality. In L. Pervin & O. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 57–101). New York, NY: Guilford Press.
Westen, D., Novotny, C. M., & Thompson-Brenner, H. (2004). The empirical status of empirically supported psychotherapies: Assumptions, findings, and reporting in controlled clinical trials. *Psychological Bulletin*, *130*(4), 631.
Williams, P., Kern, M. L., & Waters, L. (2015). A longitudinal examination of the association between psychological capital, perception of organizational virtues and work happiness in school staff. *Psychology of Well-Being*, *5*(1), 5.
Wilson, E. O. (1975). *Sociobiology: A new synthesis*. Cambridge, MA: Harvard University Press.
Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, *107*, 101–126.
Wrightsman, L. S. (2001). *Forensic psychology*. Belmont, CA: Wadsworth/Thompson Learning.
Zorawski, M., & Killcross, S. (2003). Glucocorticoid receptor agonist enhances pavlovian appetitive conditioning but disrupts outcome-specific associations. *Behavioral Neuroscience*, *117*(6), 1453–1457.

ACKNOWLEDGEMENTS

Photo: © Johnny Greig / Getty Images
Photo: © Love Your Sister
Photo: © Stefano Bianchetti / Alamy Stock Photo
Photo: © Pictorial Press Ltd / Alamy Stock Photo
Photo: © Bjanka Kadic / Alamy Stock Photo
Photo: © Nina Leen / Time & Life Pictures / Getty Images
Photo: © Granger Historical Picture Archive / Alamy Stock Photo
Photo: © Getty Images / Diana Ong
Photo: © Volodymyr Goinyk / Shutterstock.com
Photo: © Sukanya Dechying / Shutterstock.com
Photo: © The Print Collector / Alamy Stock Photo
Photo: © Ruslan Guzov / Shutterstock.com
Photo: © mooinblack / Shutterstock.com
Photo: © nito / Shutterstock.com
Photo: © Australian Psychological Society
Photo: © New Zealand Psychological Society
Photo: © TK Kurikawa / Shutterstock.com