Introduction to psychology

1

'Be not afraid of life. Believe that life is worth living, and your belief will help create the fact.'
(William James)

1 Psychology for the IB Diploma

KEY QUESTIONS

- How has the centuries-old interest in the human mind developed into the structured, academic discipline of psychology?
- What approaches are applied to psychology at IB Higher and Standard Levels?

Learning objectives

- Describe key debates that underlie much of the current research in psychology. (AO1)
- Explore the development of different approaches to the study of the human mind. (AO2)
- Evaluate how far psychology may be recognised as a science. (AO3)

1.1 Changing approaches to psychology

More than a century ago, the first Harvard University professor of psychology, William James (1842-1910), claimed that the greatest discovery of his generation was that the individual could alter his or her own life through a change in attitude, a change in thinking and a change in mindset.

Psychology is deeply involved with the study of all three: attitude, thinking and mindset. Most psychologists today accept that psychology is the disciplined study of mind and behaviour. Here, we will consider whether that idea can be taken a stage further, by defining psychology as the science of mind and behaviour. Is psychology a science?

Psychology is psych+ology, built on two Greek words: 'psyche' meaning 'the mind', and 'logos' meaning 'the science of'. By definition, psychology is the science of mind and behaviour. For millennia, philosophers, religious leaders and those involved with other people have shown deep interest in how the minds of other people work. How far psychology is a science will be considered later in this chapter.

Over the last 140 years, these concerns have acquired two distinctive dimensions that have turned human curiosity and awareness into an academic discipline:

1 **Empiricism**: the understanding of human behaviour needs to be based on findings that can be observed and counted.

2 **Positivism**: theory on human behaviour has to be supported by scientific evidence.

During that period, the means of studying the human mind have developed into increasingly varied and complex approaches.

The advances in research methods available to psychologists have been reflected in the range of increasingly sophisticated means of investigation, which include the following:

1 Focus on studying the conscious mind: separating the person's own mental experiences into visual, tactile and emotional components. In other words, the consideration of the images, sensations and feelings that an individual experiences in order to understand their way of thinking. Developed by Wilhelm Wundt (1832–1920) in 1879 in his laboratory in Leipzig, Germany, the **conscious mind approach** has been criticised for being academic rather than practical.

2 Focus on studying what thoughts and behaviour are meant to do, which is the **functionalist approach** of William James (1842–1910) developed at Harvard in Boston, USA. Influenced by Charles Darwin, the approach that he detailed in *Principles of Psychology* in 1890 was based on the typical pattern that individuals seek to enable the continuation of their lives by successfully adapting to changing circumstances and situations: what is known as the survival of the fittest. Some of his ideas continue to be developed today, especially through the work of biological psychologists who strongly favour evolutionary-based explanations of thinking and behaviour.

3 Focus on studying the unconscious mind to explain thoughts and behaviour. Dreams and word-associations are regarded as indicators of earlier-life, behaviour-influencing experiences that are believed to have a profound influence on the individual's behaviour without the individual being aware of it. It was Sigmund Freud (1856–1939) and his school in Vienna, Austria, that developed this **psychoanalytical approach** in the early part of the 20th century.

4 Focus on studying observable elements in behaviour under the headings of stimulus and response. This is based on data collection, empiricism and the notion that psychology had to be objective in order to be a scientifically acceptable discipline. Using the methodology of natural science, it contrasted with the subjective and introspective approach of Wundt. Among its most famous researchers are John Watson (1878–1958) and B.F. Skinner (1904–90). Known as the **behavioural approach**, it developed during the same decades as the psychoanalytical approach. In contrast to psychoanalysis, it avoided focus on the unconscious and thought processes, as these were not observable and could not be measured.

Psychology: the disciplined study of the mind and behaviour.

Empiricism: the view that the understanding of human behaviour needs to be based on findings that can be observed and counted.

Positivism: the view that theory on human behaviour has to be supported by scientific evidence.

Conscious mind approach: the consideration of the images, sensations and feelings that the individual experiences as a way to understand what that a person is thinking.

Functionalist approach: based on the idea that individuals seek to enable their continuation by successfully adapting to changing circumstances and situations: the survival of the fittest.

Psychoanalytical approach: a means of investigating mental disorders based on the interaction of conscious and unconscious mental elements.

Behavioural approach: focuses on studying observable elements in behaviour under the headings of stimulus and response.

5 Focus on the way that the mind processes information, known as the **cognitive approach**. Of increasing importance since the mid-1950s, its **paradigm**, or pattern, is that investigating the ways the mind processes stimuli and information is the key to understanding human behaviour. It is true that science only has a limited understanding of the workings of the brain. However, cognitive psychologists hold that it is possible to set up testable models of how the brain processes information, and then compare inputs (stimuli) and outputs (responses) as a means of accessing the ways that the brain handles the information that had previously been difficult to observe directly. Indeed, cognitive psychology makes much use of experimental methods, which are discussed in the next chapter. In addition, the scope of cognitively-based research in psychology has widened considerably with scientific advancements in **brain-scanning techniques** and collaboration with biologically orientated researchers.

Cognitive approach: focus on how behaviours relate to the way that the mind processes information.

Paradigm: an over-arching way of thinking that accommodates a set of theories.

Brain-scanning techniques: electronic technology making it possible for doctors and researchers to view activities within the brain without using invasive surgery.

6 Focus on social and cultural contexts in which behaviour is learnt and occurs – the **socio-cultural approach** to behaviour. This developed through the 20th century, and tended to concentrate on the way that collective experiences, group identity and language impact the behaviour of the individual. More recently it has considerably overlapped with cognitive psychology when researching how social and cultural inputs can influence the way in which individuals process information.

Socio-cultural approach: focus on how behaviour relates to the social and cultural contexts in which behaviour is learnt and occurs.

7 Focus on the ways that genetics, the nervous system and the endocrine (hormone) system influence human thoughts and actions. This is the **biological approach** to behaviour. The more recent findings here are based on research in the areas of the genetic basis of behaviour, the localisation of brain functions (which parts of the brain are responsible for specific human functions), and the role of hormones and neurotransmitters.

Biological approach: focus on the ways that genetics, the nervous system and the endocrine system influence thoughts and actions.

These seven approaches may all be applied to explain specific behaviour patterns, such as why a person learns languages quickly, why a person seems unable to fit into a school or workplace routine, why an 18-year-old fears starting a conversation with a stranger, and why a person shows symptoms of depression for a prolonged period.

Sigmund Freud (1856–1939)

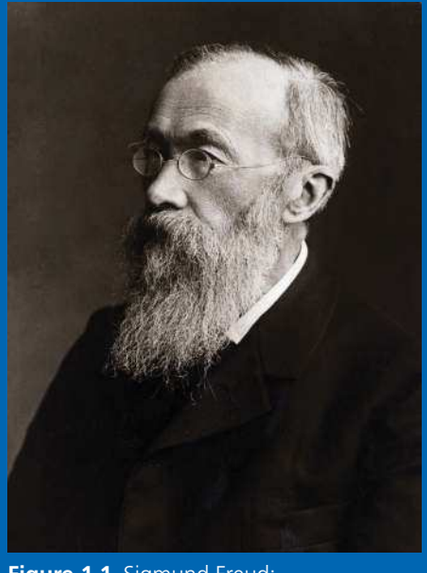

Figure 1.1 Sigmund Freud: psychoanalytical approach

Sigmund Freud (1856–1939) was an Austrian medical doctor. His experience in treating patients indicated that many physical symptoms of illness are strongly influenced by the work of the unconscious mind. He became increasingly convinced that it does not just impact on health, but on individual patterns of behaviour as well. Childhood experiences, often long-forgotten, are particularly significant and unconscious contributors to emotional drives, sexual inclinations and behaviours, inner conflict and psychologically abnormal conditions. Freud's approach was to access the individual unconscious mind through analysing dreams and by using word associations: for example, he might choose 'tree' and the patient would say the first word that came to mind. Freud would use these findings to build up the workings of the patient's unconscious mind. From there, he would identify the causes of the disorder and work towards resolving it.

Though Freud's ideas are hard to verify scientifically, they are still much-discussed and influential today.

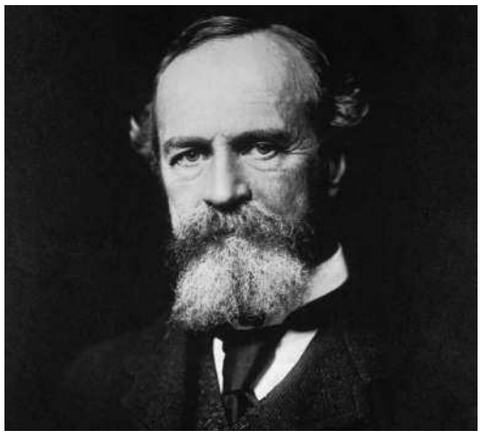

Figure 1.2 Wilhelm Wundt: conscious mind approach

Figure 1.3 William James: functionalist approach

Figure 1.4 John Watson: behavioural approach

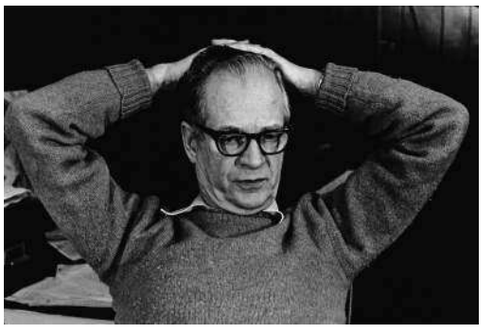

Figure 1.5 B.F. Skinner: behavioural approach

Think of these seven approaches as lenses of a microscope. Each of the seven lenses is focused on the same item. The item is a specific behaviour, as in the above examples. Each will contribute a different perspective to the same situation.

Let's take the first example: *why a person learns foreign languages quickly*. The different lenses may contribute elements as shown in Table 1.1.

1 Conscious mind approach	Feeling good about being able to communicate in a foreign language, enjoying the smiles and hugs of recognition from others.
2 Functionalist approach	Motivated by the belief that speaking foreign languages enables the forming of vital connections with a wider range of people.
3 Psychoanalytical approach	Positive, foreign-language-based encounters in early childhood, though no longer consciously remembered.
4 Behavioural approach	Increasingly high standards of communication in a foreign language have been positively reinforced by previous language-learning success.

Table 1.1 Different approaches in psychology (continued)

5 Cognitive approach	Ability and determination to encode new vocabulary and language structures into the brain's memory structures. May be assisted by a strong self-belief in language-learning abilities that may or may not be based on previous language-learning experiences.
6 Socio-cultural approach	The rate of progress in language learning is determined by the degree of interaction with those speaking that language and the attitudes of the individual's culture and society, towards learning foreign languages
7 Biological approach	The rate of progress in language learning is determined by the density of neurons and associated neurotransmitters in the parts of the brain that handle language learning.

Table 1.1 Different approaches in psychology

The core of the IB at both Higher and Standard Levels focuses on the workings of just the final three approaches. The options for the IB at both Higher and Standard Levels apply these three approaches to specific areas of investigation in psychology.

1.2 The microscope analogy applied to IB psychology

If we use the example of the microscope again, the IB approach may be compared to one that uses just three distinct lenses. These lenses are the biological approach, the cognitive approach and the socio-cultural approach, and they are all focused on human behaviour.

While Chapter 2 introduces the methodologies, which are presented systematically in Chapter 10, Chapters 3, 4 and 5 study the perspectives of each 'lens' in turn. Chapters 6, 7, 8 and 9 apply all three lenses to optional areas of study: abnormal psychology, the psychology of human relationships, health psychology and development psychology. It is therefore vital that you are thoroughly familiar with the elements of the biological, cognitive and socio-cultural approaches to human behaviour before proceeding to apply them to the more specialised branches of psychology.

For now, consider how these various lenses can view and give insight into one particular behaviour. We will choose the specific behaviour of an individual who regularly eats considerably more than necessary to maintain good health.

The biological lens will pay attention to the evolutionary and genetic factors. It will consider that the person's hunter-gatherer ancestors could not rely on being able to access food regularly. For survival, they needed to consume large amounts of food when possible, storing the excess as layers of fat to be turned into energy when food was not available. Being able to store and mobilise excess fat was a crucial factor in surviving to reproductive level. Being able to pass on the essential genes for the capacity to store and utilise fats meant that successive generations would overeat when given the opportunity, converting the excess into fats instead of passing it out of the digestive system. This is irrespective of the fact that for many people today, food is readily available at all times. These biological elements are considered in more detail in Chapter 8.

Switching to the cognitive lens will likely draw attention to the excessive eating possibly happening because of unrealistic expectations from dieting. Individuals enthusiastically put themselves on diets and exercise programmes. However, many soon find themselves on a break-restart, break-restart cycle. As a result, personal weight suffers the yo-yo effect, going up and down.

Figure 1.6 The microscope analogy

Moving to the socio-cultural lens may well reveal the increasingly sedentary lifestyle of modern life, where the individual drives rather than walks to work and uses a computer rather than heavy manual labour in the workplace. Overeating may also be due to higher salaries leaving people with more money left over to pay for non-essentials such as highly tasty but heavily sugared manufactured foodstuffs.

These different perspectives do not necessarily contradict each other. However, a modern psychologist has the task of evaluating the relative importance of the contribution of each element. Strong emphasis on the findings of one lens can indicate a **reductionist** approach, whereas an attempt to integrate the findings of all lenses would demonstrate a more **holistic** perspective.

Reductionist: explaining a phenomenon in terms of a single cause and/or approach.

Holistic: dealing with or treating the whole of a phenomenon and not just a part.

Theory: a well-substantiated explanation for a phenomenon or relationship.

Hypothesis: a proposed explanation of something observed which may be supported or refuted by evidence.

1.3 How far is psychology a science?

We have already mentioned that empirical and positivist elements are used in psychological enquiry. However, in evaluating psychology's position as a science, these elements need to fit in with the three essential characteristics of scientific investigation:

1 There has to be underlying **theory**, out of which hypotheses can develop. This collective structure is called a paradigm.

2 Testing has to be possible in order to obtain precise data that may support or refute the **hypothesis**.

3 That which is being investigated, and the investigative procedures, need to match reality. The findings should be applicable to explain associated real-world observable phenomena.

Kuhn (1962) proposed that paradigms within a discipline go through three stages:

1 Pre-science stage: where there are many different conflicting approaches to an area of study.

2 Normal science: where researchers work within the same set of paradigms.

3 Revolution: where a conflicting paradigm becomes so persuasive that it creates a paradigm shift within the discipline that becomes accepted by its body of researchers.

1 Psychology for the IB Diploma

Kuhn argues that psychology cannot be regarded as completely scientific, as some approaches used in research are not easily measured and quantified. A psychoanalyst and a behavioural psychologist would approach a patient with major depression for example, in different ways. Researchers using quantitative methods are likely to place greater weight on the statistics and what may be inferred from them. Those using qualitative analysis will probably focus on fewer participants, but use detailed interviews or questionnaires designed to enable the participant to inform on individual background circumstances, emotions, other important details not easily reached by quantitative methods. However, Feyerabend (1975) disagrees, holding that the research process is actually hindered when researchers deliberately work within a set of beliefs that are common to those working in that discipline. He argues that scientific progress is actually promoted in situations where researchers work outside their subject's set of beliefs, and their work is strongly attacked and strongly defended.

Under Kuhn, the growing similarities between biological and cognitive psychologists and their shared paradigms may well be moving the subject from pre-science towards normal science. Under Feyerabend's criterion, it may indeed be argued that psychology is a normal science, as it is the wider range of paradigms which are strongly held by the different approaches that characterise the discipline.

We will now visit in more detail the theories and hypotheses that are typical of psychological enquiry. Many of the following ideas can be applied to any discipline that involves theories and hypotheses. We will then introduce the concept of methodologies used to investigate the hypotheses; methodologies themselves being a vital strand that is developed in the next chapters. We will briefly consider how far these methodologies are scientifically based and whether they indeed address the hypothesis of the research.

We have already stated that paradigms in psychology form the area within which theories can develop, which in turn generate hypotheses. Suitable data is required for the support or rejection of the hypothesis, whose nature is more fully explored in later chapters and systematically in Chapter 10.

Karl Popper (1934, translated in 1959) holds that scientific theories and their associated hypotheses must be **refutable**, meaning that the analysis of the data gathered in research can cause the hypothesis to be rejected. Indeed, a typical hypothesis in psychology is commonly expressed negatively, using a **null hypothesis**.

Refutable: able to be rejected, for example where the analysis of data gathered in research has the potential of causing the rejection of the hypothesis.

Null hypothesis: where the hypothesis is expressed in terms of there being no statistical significance between two variables under study. Research involves attempting to discredit it.

Confirmation bias: a heuristic where the individual focuses on information and interpretations that confirm pre-existing opinions and expectations.

Correlational: having connection between two or more things, such as sets of data or situations.

For example, suppose you are researching the effect of background music on success in a memorisation task. The null hypothesis would state that the presence or absence of background music neither aids nor adversely affects the memorisation process. If the data obtained supports the null hypothesis, then the positive hypothesis proposing that background music affects the memory process has been indicated to be incorrect. Hypotheses are reframed as null hypotheses for the following reason: if the theory was framed as a positive hypothesis, it would tempt the researchers towards **confirmation bias**, meaning accepting information that supports the hypothesis and avoiding information that rejects it.

The positive hypothesis is supported where the data indeed rejects the null hypothesis. This is Popper's argument: science progresses through refutation rather than support.

The methodology of research needs to be scientific in order for psychology to be considered as a science. That means that its research methods must be standardised, replicable and, when possible, controlled.

In addition, the hypothesis should relate to the real world as opposed to the laboratory situation. This makes investigation more difficult when it takes place in a simulated environment, and its findings are generalised to the real-world situation. How ecologically valid are the findings? Are the apparently supported theoretical relationships **correlational**? This means that although one variable is shown to affect the other, in fact that can only happen when there is a third element operating in the background which happened in the laboratory simulation but is not always present in real life. Even where investigations are controlled, ecologically valid, replicable and non-correlational, the acceptance of the hypothesis does not mean that behaviour in similar circumstances is entirely predictable. This is because subsequent similar research may produce conflicting results or confine the original discovered relationship to more specific circumstances.

In addition, the investigation must be **ethically acceptable** to be valid research in psychology. Ethics are addressed in Chapter 2.

In reality, the main methodological uneasiness of psychology being considered as a science arises out of the sheer complexity of the issues that the subject addresses: human thinking and human behaviour. Even the simplest actions and behaviour are affected by biological, mental and environmental factors, which vary considerably between locations, cultures and the human processing of stimuli and information. These place serious barriers to understanding and predicting human behaviour.

Ethically acceptable: the research conforms to the professional guidelines binding on psychology investigators.

1.4 Ongoing general debates in psychology

In addition, irrespective of whether the biological, cognitive or socio-cultural lens is used in our microscope, you should be aware that there are up to four debates underlying any theory or research in psychology. These can be illustrated with William, aged ten. William is highly intelligent, popular and athletic, but has a condition called **arachnophobia** (meaning a great fear of spiders).

The four debates are as follows:

1 The nature-nurture debate. Are William's fears related to the working of his genetics and nervous system (nature), or did the words and behaviours of other people communicate to him that spiders are harmful (nurture)?

2 The reductionist-**holism** debate. Is William's fear of spiders due to one particular cause (reductionist), for example hearing a bedtime story of a child being bitten by a spider, or remembering his older brother scream as a large spider suddenly appeared on his shoulder? Or is his situation caused by more than one, or by many, factors?

   Bear in mind that psychology is becoming increasingly holistic in approach. This is particularly the case in developments in social psychology that increasingly overlap with cognitive approaches, and advances in cognitive methods of investigation that incorporate biological methods of investigation.

3 The free will-**determinism** debate. Did William choose to be scared of spiders (free will), or did he not have any option in the matter?

   Taken to extremes, this debate raises the question of, for example, whether criminal behaviour is genetically determined.

Figure 1.7 'Get me away from that thing!'

Critical thinking

Read the research of Kiecolt-Glaser (1984) in Chapter 8. This work investigates whether personal stress may increase the likelihood of susceptibility to infectious disease.

Evaluate how far that research may be regarded as scientific.

Arachnophobia: fear of spiders.

Holism: the explanation of a phenomenon in terms of a variety of causes and/or approaches.

Determinism: where a thought process or behaviour is considered to happen through processes beyond the individual's choice or control.

4 The nomothetic-idiographic debate. May the factors determining William's fear of spiders be generalised to anyone who has encountered similar spider-related events as William (**nomothetic**), or are the elements in William's case exclusively specific (**idiographic**) to William?

Nomothetic: where the factors influencing a person's behaviour can be generalised to the behaviour of individuals in similar circumstances.

Idiographic: where the factors influencing a person's behaviour cannot be generalised to others in similar circumstances, but are specific to that individual.

Researchers in psychology almost always have to consider how far their findings are valid for populations with different characteristics to those investigated. Frequently, researchers study their most accessible population, which is the undergraduate body of students within their own department. These people are generally young, intelligent, culturally compatible with the department and in good health. The researchers have to assess how far their findings may be generalised to individuals with only some of those characteristics, or none at all.

1.5 Cultural issues

Ethnocentrism: the generalising of the findings on one culture to another culture.

In addition to the above debates, the interpretation and validity of theory and research studies in psychology are subject to possible elements of cultural bias which have to be borne in mind, such as the following:

- **Ethnocentrism**: generalising the findings on one culture to another culture. For example, studies on people's willingness to help others carried out in Western societies need to bear in mind that the costs and rewards of helping others may be very different in other cultures. Indeed, about two-thirds of published work in psychology is from North America, which contains only 17% of the world's population. Reviews of research in these countries indicate that only about 5% of those tested are non-white.
- Theoretical bias: for example, the Western evolutionary concept of the survival of the fittest is less applicable to many African societies. They tend to prioritise the survival of the tribe as a whole and think in terms of interdependence rather than independence, and co-operation rather than competition.
- Methodological bias: for example, the Western criteria for diagnosing depression are based on psychological symptoms such as feelings of sadness, worry and guilt, and thoughts of suicide. These criteria are less effective in identifying the symptoms reported by patients in China and the Asian Pacific Rim that might well indicate depression.
- **Gender bias**: for example, the psychological research on anorexia nervosa is largely based on women, who constitute the majority of diagnoses. There are few studies of male anorexia, raising the question of the extent to which the findings on female patients may be generalised to include male patients.

Gender bias: the possibility that a diagnosis or means of treatment of abnormality may be wrongly influenced by perceived gender similarities or differences between the professional and the patient.

ACTIVITY 1.1

Under the heading 'a career in psychology', suggest ten different types of work opportunity that might attract a university graduate in psychology. Bear in mind that some jobs will involve years of specialised training beyond a first degree.