

Approaches in Psychology

What is an approach in psychology? An “approach” is a way of addressing the problem of explaining behaviour. Different psychologists prefer different approaches in the same way that you may be politically liberal whereas someone else is politically conservative. We all find that different things make sense. In terms of psychology, the situation is not as straightforward as in politics, as most people might favour one kind of approach when explaining, say, aggression, whereas they might favour another approach when offering an account of why some individuals develop mental disorders.

Ask yourself

- What concepts do biologists use when describing behaviour?
- Why are some behaviours naturally selected?
- What is a “radical behaviourist”?
- How do neo-behaviourists differ from behaviourists?
- What experiences in early life motivate adult behaviour?
- How do biological drives interact with early experience?
- In what way does “social cognition” use the cognitive approach?
- What are some of the limitations of the cognitive approach?

Introduction

No single explanation is “right” and no one explanation is right for every behaviour. Each of them is appropriate in different contexts. They form part of the psychologist’s “toolkit”. You must choose the psychological explanations that make best sense to you. However, it is important to note that it is *not* necessary to favour one approach over all others when trying to explain behaviour, because they often *all* have something to contribute. For example, there is no single cause of mental disorders such as schizophrenia or depression; instead, several biological and psychological factors all play a role.

All of the approaches in this chapter have been discussed elsewhere in this book, so here we will present an overview of the major approaches.

You will need to develop a major understanding of the key approaches in psychology through studying the topics in psychology. In order to assist you, we have structured the text for each approach in the following way:

- A description of the approach, including some examples of the approach
- An evaluation of the key concepts of the approach
- A description of the methodology adopted by each approach
- An evaluation of the methodology of the approach.

THE BIOLOGICAL APPROACH

Key Concepts

Biology refers to the study of living organisms. Included within the biological approach are the following:

1. Physiological psychology, which is concerned with the functioning of the body
2. The nativist approach, which is concerned with an individual's genetic nature
3. The medical approach, a term used to describe how mental disorders are explained in the same way that the medical profession explains physical illnesses.

Note that there are some overlaps among these three approaches. For example, researchers within the medical approach often explain mental disorders in terms of genetic factors (the nativist approach), and individual differences at the genetic level may influence physiological processes (physiological psychology).

See the separate section below for more on the evolutionary approach.

The *two* key assumptions of this approach are that all behaviour can be explained and understood at the level of the functioning of biological systems, and that both behaviour and experience can be reduced to the functioning of biological systems.

The physiological approach

A **physiological** explanation is one that refers to bodily activity. There are physiological theories about dreaming based solely on brain activities, i.e., the functioning of the central nervous system. It is claimed, using the physiological perspective, that dreams are simply the random electrical activity of the brain during sleep upon which the mind imposes some sense. Other physiological explanations make reference to **neurotransmitters** and **synapses**, such as explanations of mental disorders.

A further example of a physiological account could be of stress, which would focus on how your heart rate and breathing increase when in the presence of a stressor. Explanations of how the body responds to stress were considered as part of your AS studies. Activity in the autonomic nervous system and endocrine system lead to the production of **hormones** that govern the stress response.

The nativist approach

In the Section on nature and nurture we saw that Plato talked about things being inborn or native to an individual, as contrasted with those characteristics acquired through experience. The nativist approach to understanding behaviour is based on the idea that all behaviour is inherited. The unit of communication between one generation and the next is the **gene**. There is some overlap here with evolutionary psychology in that evolutionary psychologists emphasize the importance of genes.

However, a key difference is that evolutionary psychologists are mainly interested in extremely long-term evolutionary processes involving natural selection.

The medical approach

The biological or somatic approach to the treatment of mental disorders suggests that psychological problems can be treated in the same way as physical problems. The medical model of mental illness assumes that all mental disorders have a physical cause (micro-organisms, genetics, biochemistry, or neuro-anatomy). It also assumes that mental illnesses can be described in terms of clusters of symptoms; and symptoms can be identified, leading to the diagnosis of an illness. Finally, diagnosis leads to appropriate physical treatments (e.g., chemotherapy).

Examples of the biological approach

The biological approach underlies the whole of physiological psychology. You might especially consider how psychologists use the biological approach to explain biological rhythms, aggression, eating behaviour, and gender. You should also contrast such biological explanations with alternative ones such as Freud's account of psychosexual development.

Chomsky's account of language acquisition is a biological (nativist) explanation. A number of explanations within developmental psychology are grounded in biology. Piaget's account of cognitive development relies on the notion of maturation or biologically determined stages in development (see *A2 Level Psychology* Chapter 9, Cognition and Development). This also applies to Piaget's theory of moral development (see *A2 Level Psychology* Chapter 9, Cognition and Development) and to some theories of gender development (see *A2 Level Psychology* Chapter 7, Gender).

The evolutionary approach to explaining behaviour is also biological but mostly doesn't involve a focus on physiological processes.

Finally, the study of individual differences includes a consideration of the biological (medical) model of abnormality. Psychopathology considers biological explanations and therapies used in the treatment of schizophrenia, depression, and anxiety disorders.

Evaluation of Key Concepts

Below are listed some of the main strengths and weaknesses of the biological approach. Blue words indicate the issue to which the point relates.

Strengths

- **Reductionism:** Explanations within the biological approach are reductionist, and these explanations have often proved useful. Examples include the restoration theory of sleep and theories of schizophrenia that emphasize brain structure and/or brain chemistry.

- **Determinism:** Advocates of the biological approach have identified important factors (e.g., genes, brain chemistry) that have a substantial impact on human behaviour.
- **Individual differences:** The biological approach has proved successful in showing that genetic factors play a role in explaining individual differences in intelligence (and in explaining why some individuals are more likely than others to develop certain mental disorders).
- **Applications:** The biological approach has proved valuable in terms of the use of chemotherapy to treat various mental disorders (e.g., schizophrenia, depression, anxiety). In addition, genetic counselling for prospective parents is an outcome of our understanding of the links between genes and behaviour. For some parents this is an enormous relief where, for example, they carry a genetic susceptibility for a fatal disease. However genetic counselling raises many ethical problems in relation to the concept of “designer babies”.

Weaknesses

- **Reductionism:** The reductionist nature of the biological approach is oversimplified in that we can’t obtain a complete understanding of human behaviour by focusing only on biological factors. For example, various psychological, social, and cultural factors influence the development of mental disorders such as depression and anxiety, and these factors are ignored within the biological approach.
- **Determinism:** Biological explanations are deterministic, and often involve focusing on genetic factors. However, the influence of genetic factors on behaviour is typically *indirect*. For example, Plomin et al. (1990) found in a twin study that genetic factors influence television watching, but it is very difficult to work out *how* genes have this effect!
- **Nature–nurture:** The biological approach exaggerates the importance of genetic factors in determining behaviour while minimising the importance of environmental factors.
- Biological explanations are more appropriate for some kinds of behaviour (such as vision) than other kinds where higher-order thinking is involved (e.g., emotion; reasoning). However, even vision involves some higher-order mental activity. Therefore, biological explanations on their own are usually inadequate.

Methodology

Researchers within the biological approach use several different methods. Some researchers use physiological measures to increase our understanding of human behaviour. For example, use of the EEG provided evidence for different stages of sleep and showed that there is an association between dreaming and rapid eye movement (REM) sleep. Brain-imaging research by Mohanty et al. (2008) showed that the brain is activated by food images when we are hungry but not if we are sated.

A common way of assessing the importance of genetic factors is by studying identical and fraternal twins. If identical twins are more similar than fraternal twins in behaviour (e.g., performance on an intelligence test), this supports the notion that genetic factors are important. Note that it isn't ethically possible to *manipulate* genetic factors in experiments on humans, and so the evidence we have is somewhat indirect.

Advocates of the biological model approach to mental disorders carry out research in which they compare patients with some mental disorder with normal individuals in order to see whether there are any significant differences in bodily functioning or structures. For example, the brain volume of schizophrenics is less than that of normal controls, and schizophrenics also have enlarged ventricles in the brain. There is a problem of interpretation with such findings—do these differences help to cause schizophrenia or are they merely a consequence of being schizophrenic?

Evaluation of Methodology

Below we consider some of the main strengths and weaknesses of the methodology used by researchers within the biological approach. Blue words indicate the issue to which the point relates.

Strengths

- The various types of experimentation used within the biological approach all have their strengths. For example, physiological studies have added greatly to our understanding of sleep by providing an additional source of evidence over and above behaviour. Twin studies have suggested that genetic factors influence much of our behaviour (e.g., intelligence; susceptibility to mental disorders). The fact that chemotherapy is often effective in treating mental disorders suggests (but doesn't prove) that physiological processes are involved in mental disorders.
- Nature–nurture: Twin studies (in spite of their limitations) generally provide the best way of trying to determine the role of genetic factors in influencing behaviour, and are used extensively by researchers using the biological approach.

Weaknesses

- Determinism: Researchers within the biological approach generally can't provide convincing deterministic accounts of the ways in which genes influence behaviour—their impact on behaviour is indirect and poorly understood.
- Determinism: Many studies based on the biological model have found biochemical or other differences between patient groups (e.g., schizophrenics) and normal controls. However, it is difficult to provide a clear deterministic account of what is happening because we generally don't know whether the bodily differences help to cause the disorder or whether having the disorder triggers the bodily differences.

- Nature–nurture: Twin studies provide only an indirect way of assessing the importance of genetic factors in determining behaviour. If we find that the behaviour of identical twins is more similar than that of fraternal twins, this may be due (at least in part) to their much greater genetic similarity or to greater similarity in their environments.

SECTION SUMMARY: The Biological Approach

Key concepts

- There are two key assumptions of the biological approach:
 - All behaviour can be understood in terms of the functioning of biological systems.
 - Both behaviour and experience can be reduced to the functioning of biological systems.
- The biological approach includes the following:
 - Physiological psychology: behaviour can be explained in terms of bodily activity such as brain activity (e.g., Mohanty et al.'s (2008) research on hunger), neurotransmitters (e.g., explaining depression), and hormones (e.g., stress).
 - The nativist approach: behaviour can be explained in terms of genes and heredity.
 - The medical approach: psychological problems can be treated in the same way as physical ones.
- The biological approach underlies physiological psychology

Evaluation of the key concepts

- Strengths of the approach include:
 - Reductionist explanations, which can facilitate experimental research.
 - Genes and brain chemistry have an impact on behaviour.
 - Genetics play a role in explaining individual differences in intelligence and mental disorders.
 - Various practical applications such as drug therapy for mental illness.
- Weaknesses of the approach include:
 - An excessive emphasis on biological rather than psychological factors
 - The poorly understood connections between genes and behaviour
 - The neglect of environmental factors.

Methodology

- Researchers within the biological approach use various methods including:
 - Physiological techniques
 - Twin studies
 - Comparisons of bodily functioning in patients with mental disorders and normal individuals.

Evaluation of the methodology

- Strengths of the methodology include:
 - All these methods are of use.
 - The twin-study approach is the best way of assessing the involvement of genetic factors in behaviour.
- Weaknesses of the methodology include:
 - Problems with deciding whether bodily differences between patients with mental disorders and normals actually play a role in triggering mental disorders.
 - Difficulties in interpreting the findings from twin studies.

BIOLOGICAL APPROACH: EVOLUTIONARY EXPLANATIONS

Key Concepts

Evolution is a fact—to evolve is to change over time. There is clear evidence that groups of animals have changed over time. Charles Darwin's theory of evolution and natural selection is an attempt to offer an explanation for this process of change. The essential principles of this theory are:

- Environments are always changing, or animals move to new environments. Environmental change requires new adaptations for species to survive.
- Living things are constantly changing. This happens partly because of sexual reproduction where two parents create a new individual by combining their genes (although Darwin wasn't aware that there were such things as genes, he knew that the information was transmitted in some way). It also happens through chance **mutations** of the genes. In both cases new traits are produced.
- Competition between individuals for limited resources (such as access to food and/or mates) means that those individuals who possess traits best adapted or suited to the changing environment are more likely to survive to reproduce (it is reproduction rather than survival that matters). Or, to put it another way, those individuals who best "fit" their environment survive (survival of the *fittest*). Or, to put it yet another way, the *genes* of the individuals with these traits are naturally selected. No-one "selects" these individuals with useful traits; they are *naturally* selected.

In order to understand the concept of **natural selection**, consider this example. A cattle or sheep farmer chooses which male and female stock animals have the best characteristics for milk production or for increased reproduction (e.g., giving birth to lots of twins), and mates these individuals. This is selective breeding or artificial selection. In nature, no-one does the selecting—it is natural pressures that do it, hence "natural" selection.

The end result is that those individuals who possess the physical characteristics and behaviours that are **adaptive**, i.e., help the individual to better fit its environment,

are the ones that survive. Those traits that are non-adaptive disappear, as do the individuals with those traits. It should be emphasized that it isn't the individual, but their genes, that disappear. Natural selection takes place at the level of the genes. A classic example of this is the tendency for parents to risk their lives to save their offspring, which can be seen in altruistic behaviour. If altruistic behaviour is inherited then it must in some way promote survival and reproduction. But one would think this can't be true, because an altruistic act involves a risk to the altruist's life. However, if the altruist is risking his/her life to save a genetic relative, then the altruistic behaviour enhances the survival of the individual's genes.

It is important to note that evolutionary psychologists don't assume that *all* forms of behaviour are adaptive. Evolutionary psychologists refer to the **environment of evolutionary adaptation** (EEA)—the period in human evolution during which our genes were shaped and naturally to solve survival problems operating then. This was roughly between 35,000 and 3 million years ago. Non-adaptive forms of behaviour can be explained on the basis of genome lag—it takes thousands of generations for non-adaptive forms of behaviour to be eliminated from the human repertoire via natural selection. For example, evolutionary psychologists can use genome lag to explain the stress response. We can't deal effectively with most of today's stressors by increased physiological arousal and "fight or flight", but these reactions were very useful during the time of the environment of evolutionary adaptation.

The concept that altruistic behaviour is adaptive because it promotes the survival of kin wasn't one of Darwin's ideas. In fact, for him, altruism was a paradox. It was socio-biologists such as Hamilton (1964) and Dawkins (1976) who suggested that in addition to natural selection there was kin selection. The principle of kin selection is that any behaviour that promotes the survival of kin will be selected. Darwin's theory of evolution focused on individual fitness. The socio-biologists extended this to include genetic relatives, thus kin selection *includes* the survival of any relatives sharing your genes (inclusive fitness), and the key features of the sociobiological approach were subsequently accepted by evolutionary psychologists.

The evolutionary approach assumes that all behaviour can be explained in terms of genetic determination. **Ethologists** study behaviour to ascertain its function for the individual. They argue that any behaviour must be adaptive in some way (or neutral) otherwise it wouldn't remain in the individual's gene pool. This argument is applied, for example, to mental illnesses. If the genes for mental disorders didn't have some adaptive significance, why would they still be with us? This of course assumes that mental disorders have some genetic basis, and twin studies suggest they do.

The second assumption of the evolutionary approach is that genetically determined traits evolve through natural and kin selection. A behaviour that promotes survival and reproduction of a genetic line will be "selected" and the genes for that trait survive. As the environment changes (or an individual moves to a new

environment), new traits are needed to ensure survival. Environmental change and competition exert selective pressure. New genetic combinations produce adaptation and the individual and/or genes best “fitting” the environmental niche will survive (survival of the fittest).

Examples of the evolutionary approach

Relationships can show how evolutionary explanations can be used to understand human reproductive behaviour. The evolutionary approach can also be used to explain the existence of mental disorders, and the evolution of intelligence.

Evaluation of Key Concepts

Below are lists of the major strengths and weaknesses of the evolutionary approach. Blue words indicate the issue to which the point relates.

Strengths

- Evolutionary psychology provides a powerful general approach within which to understand human behaviour. As de Waal (2002, p.187) argued, “Evolutionary psychology may serve as the umbrella idea (i.e., an overarching scheme) so desperately needed in the social sciences.”
- **Determinism:** Psychologists have mostly focused on immediate or proximate determinants of behaviour. The notion of evolutionary determinism, with its emphasis on ultimate causes of behaviour, is an important contribution to our understanding of the factors influencing our behaviour.
- **Nature–nurture:** The evolutionary approach combines effectively with the biological approach—both approaches emphasize the importance of our genetic inheritance, and the evolutionary approach goes beyond that by stressing how our genetic make-up has been determined by natural selection.

Weaknesses

- The theory of evolution offers mainly *ex post facto* (after the fact) evidence. It is hard to know whether a behaviour is actually beneficial, and that is why it remained in a gene pool, or whether it was simply neutral and was never selected against, and thus survived.
- The evolutionary approach is less applicable to human behaviour than to the behaviour of non-human species. This is because our behaviour is more influenced by experience, by conscious thought, and by the culture in which we live.
- **Determinism:** Human behaviour is influenced by numerous factors, and it is very limited to focus almost exclusively on ultimate causes at the expense of more immediate ones (e.g., the social and cultural context).
- **Nature–nurture:** Evolutionary psychologists strongly emphasize the role of nature (e.g., natural selection) in determining behaviour but largely ignore important environmental factors.

- **Individual differences:** Individual differences (e.g., in intelligence, in learning, in susceptibility to mental disorder) are clearly important, but the evolutionary approach has failed to provide an adequate explanation of individual differences.

Methodology

Evolutionary psychologists have tested their theoretical ideas in various ways. First, it is possible to assemble data from numerous cultures to see whether the predicted pattern of behaviour is consistent in all cultures. For example, Buss (1989) tested the predictions that males should prefer a mate younger than them, whereas females should prefer a mate who has good resources in 37 different cultures.

Second, some predictions of the evolutionary approach can be tested by comparing different species. For example, factors responsible for the evolution of human intelligence and the increased size of the human neocortex have been considered by comparing the living environment (e.g., size of social group) and size of neocortex in primate species.

Third, evolutionary psychologists sometimes carry out experiments to test predictions from their approach. For example, Buunk et al. (1996) tested the predictions that jealousy in men is greater when their partner is physically unfaithful rather than emotionally unfaithful, whereas the opposite is the case in women. Another example concerns laboratory studies on phobias and fears. Such research (e.g., Cook & Mineka, 1989; Tomarken et al., 1989) has shown that humans and other primates are especially sensitive to stimuli (e.g., snakes) that posed much more threat in our ancestral past than they do nowadays —the implication is that we are biologically prepared to develop fears to such stimuli.

Fourth, evolutionary psychologists sometimes simply study patterns of behaviour that have been observed by others, attempting to interpret them in evolutionary terms. For example, evolutionary psychologists have considered the symptoms of mental disorders such as schizophrenia, depression, and anxiety in order to try to work out what adaptive value these symptoms might have had in our ancestral past.

Evaluation of Methodology

The various strengths and weaknesses of the evolutionary approach are discussed below. **Blue** words indicate the issue to which the point relates.

Strengths

- One of the main strengths of evolutionary psychology is that several different approaches can be taken to testing its predictions. As we have seen, we can compare behaviour across cultures, we can compare different species, we can carry out experiments in the laboratory, and we can focus on previously obtained patterns of behaviour to assess the validity of the evolutionary approach.

- **Reductionism:** Following from the first point, evolutionary psychologists claim that we can learn much about human behaviour by studying other species. This claim has some validity, and involves using information about other species typically ignored by advocates of most other approaches within psychology.
- Some of the findings obtained by evolutionary psychologists are most easily interpreted from their theoretical perspective. For example, we acquire fears more readily to objects that used to be dangerous in our ancestral past than to recently invented objects (e.g., cars) that are much more dangerous.

Weaknesses

- **Determinism:** Evolutionary psychologists assume that human behaviour depends on ultimate causes based on natural selection. However, it is impossible to *manipulate* these ultimate causes and so the predictions of evolutionary psychology can't be tested directly.
- **Determinism:** The evidence obtained by evolutionary psychologists is difficult to interpret. For example, comparisons of the living environment and size of neocortex in primate species involve only *correlational* data, and correlations can't be used to establish causes. Many experimental studies (e.g., Buunk et al.'s, 1996, on jealousy) are limited because they are artificial and lacking in external validity. In real life, men and women react very similarly to unfaithfulness by their partners (Harris, 2002), which is very different to the findings from laboratory studies.
- **Individual differences:** When evolutionary psychologists carry out experiments, they rarely consider individual differences. For example, research on jealousy has sometimes produced evidence of differences between males and females, but there are also substantial differences *within* each sex.
- Much of the evidence used by evolutionary psychologists is weak in the sense that it can be interpreted in several different ways. For example, several theories try to identify the adaptive value originally associated with the symptoms of disorders such as schizophrenia or depression. The absence of strong evidence means that it is very difficult to decide which theories are the most valid.

SECTION SUMMARY: The Evolutionary Approach

Key concepts

- Darwin's theory of evolution is an explanation for the process of change in living things. The key principles of this theory are:
 - o Environmental change requires new adaptation.
 - o Living things are constantly changing and thus there is the possibility of new characteristics that may be more adaptive.
 - o Competition means that those best adapted are more likely to survive and reproduce.

- o It is the genes for adaptive characteristics that are selected, and this selection takes place naturally.
 - o Altruistic behaviour is an example of selection at the level of the genes.
- Sociobiologists extended evolutionary theory to include the concepts of kin selection and inclusive fitness, and these ideas were then adopted by evolutionary psychologists. The two main assumptions of the evolutionary approach are that:
 - o All behaviour can be explained in terms of genetic determinism.
 - o Genetically determined traits evolve through natural selection and kin selection.
- The evolutionary approach focuses on how evolutionary explanations can understand human reproductive behaviour, mental disorders, the evolution of intelligence, attachment, stress, and other human behaviour.

Evaluation of the key concepts

- Strengths of the approach include:
 - o Many aspects of animal behaviour can be explained by the evolutionary approach.
 - o The evolutionary approach was the first to emphasise ultimate causes of behaviour.
 - o Its focus on genetic factors helps to explain much behaviour.
- Weaknesses of the approach include:
 - o The evidence is largely *ex post facto* and cannot truly demonstrate cause and effect.
 - o Evolutionary explanations are highly deterministic.
 - o The approach is less appropriate for human behaviour than animal behaviour.
 - o Environmental factors are largely ignored.
 - o The approach does not provide an adequate explanation for individual differences.

Methodology

- In terms of methodology, evolutionary psychologists:
 - o Compare cultures to test the consistency of behaviour
 - o Compare different species
 - o Carry out experiments
 - o Consider patterns of behaviour (e.g., symptoms exhibited by patients with a given mental disorder) in the attempt to understand how these disorders might have been adaptive in our ancestral past.

Evaluation of the methodology

- Strengths of the methodology include:
 - o There are several useful techniques available to evolutionary psychologist.

- o They have the advantage over most other approaches that they take into account patterns of behaviour in other species when trying to understand humans.
 - o Findings can be easily interpreted from their theoretical perspective.
- Weaknesses of the methodology include:
 - o The inability to manipulate ultimate causes of behaviour
 - o The evidence is difficult to interpret
 - o The neglect of individual differences
 - o There is an absence of strong evidence.

THE BEHAVIOURAL APPROACH

Key Concepts

The essence of the behavioural approach is the assumption that *all* behaviour is learned and that when we are born we are like a blank slate, or *tabula rasa*. Experience and interactions with the environment make us what we are. We become what we become as a result of forming stimulus–response units of behaviour in reaction to the environment. This perspective has been called **environmental determinism** because it suggests that our behaviour is determined by the environments in which we exist.

The second assumption is that all behaviour can be explained in terms of **conditioning theory**: stimulus and response (S–R) links that build up to produce more complex behaviours. In essence, conditioning refers to changing behaviour in the absence of conscious thought, as in saying “I am conditioned to behave in that way”.

The third assumption is related to the second one. In essence, Skinner argued in favour of what is known as **equipotentiality**—this is the notion that virtually any response can be conditioned to any stimulus. In other words, it doesn’t make any real differences what stimulus–response associations we try to persuade our human or non-human participants to acquire.

The fourth assumption of the basic behaviourist approach is that we need look no further than the behaviours we can observe in order to understand and explain how humans and non-human animals operate. This is why of course it is called “behaviourism”—because the focus is solely on observable behaviour. There is no need to look at what goes on inside the “black box” of the mind (e.g., perception, attention, language, memory, thinking, and so on), it is sufficient to focus *only* on external and observable behaviour. Note, however, that later behaviourists such as Bandura *did* recognise the importance of internal processes (e.g., self-efficacy), so what has been said so far applies mostly to the approach taken by early behaviourists such as Watson and Skinner.

The fifth assumption of the behavioural approach is that humans and non-human animals are only *quantitatively* different, i.e., they differ in terms of having more or

less of something rather than differing qualitatively. This means that behaviourists can *generalise* from non-human animals (such as rats and pigeons) to human behaviour. Much behaviourist research is conducted with non-human animals, although that is less the case than it used to be.

It is important to recognise the contrasting perspectives within behaviourism:

- **Methodological behaviourism:** the view that that all perspectives use some behaviourist concepts to explain behaviour. This is a mild view of behaviourism—it is the view that the perspective is not a “stand-alone” approach but is part of all explanations.
- **Radical behaviourism:** the view that all behaviour is learned. Skinner was a radical behaviourist but most behaviourists nowadays would take a less radical view.
- **Neo-behaviourism:** this is a newer development and an extension of behaviourism. The best-known example is **social learning theory**, an attempt by Albert Bandura to reformulate learning theory to include a role for cognitive and internal factors. There are three key assumptions in Bandura’s social learning theory:
 1. We often learn by observing other people and seeing whether their behaviour is rewarded or punished—thus, there is no need to actually carry out actions oneself for learning to occur. Learning what actions are rewarded or punished by observation alone is known as **vicarious reinforcement**.
 2. Internal factors are important in learning—for example, if we believe we can succeed on some task (i.e., we have high self-efficacy) we are more likely to imitate or learn from a model whose characteristics we admire.
 3. The environment influences us but we also influence the environment by our actions—this is known as reciprocal determinism.

Examples of the behavioural approach

There are constant references to behaviourist approaches, learning theory, and social learning theory. We will identify some of the main examples here. The behavioural model of behaviour, also called learning theory and including social learning, is a possible explanation of, for example, addictive behaviour, aggression and gender, as well as in intelligence and learning.

Evaluation of Key Concepts

Below we consider some of the strengths and weaknesses of the behavioural approach. **Blue** words indicate the issue to which the point relates.

Strengths

- **Reductionism:** Classical and operant conditioning (both of which are reductionist) form a fundamental part of psychological explanations. Both

types of conditioning have been demonstrated in numerous species under very varied conditions.

- **Applications:** Many successful applications have been derived from the behavioural approach. For example, behaviour therapy is clearly successful for certain mental disorders, such as phobias. Social skills training is also related to learning theory and may be the best way to teach some individuals how to acquire certain skills (e.g., teaching an autistic child some basic self-care).
- **Applications:** Learning theory has also been applied to education. Skinner advocated **programmed learning**, a method of teaching whereby the task is broken down into individual “frames” or very small steps. A correct response acts as a reward. The system may be linear (a list of questions) or branching (the programme can “respond” to a student’s needs by offering special help with a question the student got wrong). This concept lends itself to computer-mediated learning.

Weaknesses

- **Reductionism:** The behavioural approach is based on the assumption that conditioning principles operate in similar ways in different species. By so doing, the behaviourists drastically underestimated the differences between species. For example, the fact that humans possess language transforms our learning ability. Rats who have learned to press a lever for food reward will keep pressing for a long time after food has stopped being provided. In contrast, most people will stop immediately if told that no more rewards will be given.
- **Reductionism:** The behaviourists such as Skinner argued that virtually any response could be conditioned in any situation (i.e., equipotentiality). In fact, equipotentiality doesn’t exist. For example, Cook and Mineka (1989) found that monkeys learned a fear response to a snake much faster than a fear response to a rabbit, which suggests we are biologically prepared to fear some animals that were dangerous in our ancestral past.
- **Determinism:** According to Skinner, behaviour is determined almost entirely by external stimuli, especially those signaling rewards and punishments. However, this view exaggerated the importance of *external* or environmental factors and minimised the role of *internal* factors (e.g., goals). Neobehaviourists such as Bandura have accepted that this view is too limited, and have agreed that the factors determining behaviour include internal factors as well as external ones.
- **Nature-nurture:** The behaviourists assumed that behaviour is determined by learning and environmental factors and largely (or even totally) ignored genetic factors. This assumption has been amply disproved in studies on genetic factors in intelligence and on the causes of schizophrenia and depression.
- **Individual differences:** The behaviourists assumed that individual differences in behaviour could be explained in terms of differences in

conditioning history. However, they never showed this clearly to be the case, because it is very difficult to establish someone's conditioning history over a period of several years. In addition, they failed to acknowledge the role of genetic factors in accounting for individual differences in intelligence and in susceptibility to various mental disorders.

Methodology

The behaviourists were among the first psychologists to carry out proper laboratory experiments. In these experiments, the emphasis was on controlling the environment by manipulating certain stimuli or independent variables (e.g., presentation of a tone in Pavlov's research on conditioning in dogs) and then observing the participants' behaviour. One way in which control was achieved by using fairly sparse conditions (e.g., in the Skinner box there were bare walls and one lever) so that the participants weren't distracted by irrelevant stimuli. Another example of the research carried out by the behaviourists is Bandura's research on the Bobo doll, in which he presented different groups of children with a model rewarded or punished for behaving aggressively towards the doll. Thus, the behaviourists made extensive use of the experimental method in their research.

Another characteristic of most early research carried out by the behaviourists was their use of non-human animals. However, there was a progressive change over time—for example, nearly all of Bandura's research has involved the use of human participants whether children or adults.

- *Ask yourself: What other methods of investigation might be suitable for the behavioural approach?*

Evaluation of Methodology

The various strengths and weaknesses of the methodology used by researchers within the behavioural approach are identified below. Blue words indicate the issue to which the point relates.

Strengths

- **Reductionism:** The behaviourists made a very important contribution with their use of well-controlled studies using the experimental method. This is the case for studies of classical conditioning (e.g., Pavlov) and of operant conditioning (e.g., Skinner, Bandura). In some ways, the behaviourists' use of the experimental method set the standard for subsequent researchers working within different approaches.
- **Reductionism:** The experimental approach adopted by the behaviourists was sufficient to ensure that the data obtained were reasonably objective and the findings replicable.
- **Determinism:** The behaviourists were successful in showing that certain forms of behaviour (e.g., patterns of lever pressing in operant conditioning) are determined mainly by the schedule of reinforcement or reward used by the experimenter.

Weaknesses

- **Reductionism:** Much of the research carried out by advocates of the behavioural approach lacks external validity in that it doesn't generalise to the real world. For example, the behaviourists assumed that rats (and other species) would return to the place in which they had found food because they had been rewarded or reinforced for going to that place. However, it isn't sensible in rats' natural environment for them to return to a place from which all the food has just been removed, and indeed Gaffan et al. (1983) found that rats avoided a place in which they had previously found food.
- **Reductionism:** The behaviourist notion that all we need to do is to measure behaviour is very limited. For example, you could persuade someone to say, "The earth is flat", dozens or even hundreds of times if you paid them enough, thus showing that you could control their behaviour. However, that wouldn't alter their internal knowledge that the earth is actually round.
- **Determinism:** The assumption that behaviour is determined by external stimuli led many behaviourists (e.g., Skinner) to carry out experiments in which other important factors were ignored. However, Bandura recognised that internal factors are also important, as in his research on the effects of role models.
- **Ethics:** The use of behaviourist principles to control others (as in some prisons and psychiatric institutions using reward and punishment) can be considered unethical. However, bear in mind that two noted behaviourists (Watson and Skinner) wanted to use conditioning principles to produce a better society.

SECTION SUMMARY: The Behavioural Approach

Key concepts

- There are five key assumptions of the behavioural approach:
 - The belief that all behaviour is learned in reaction to our environment (environmental determinism).
 - All behaviour can be explained in terms of conditioning theory.
 - Any response can be conditioned to any stimulus (equipotentiality).
 - The focus of explanation should be on observable behaviour.
 - Humans differ quantitatively but not qualitatively from non-human animals.
- We should recognise the varieties of behaviourism: methodological and radical behaviourism, and neo-behaviourism (social learning theory). Neo-behaviourists accept that internal factors are important as well as external ones.
- The behavioural approach underlies learning theory and social learning theory.

Evaluation of the key concepts

- Strengths of the approach include:
 - Classical and operant conditioning form a fundamental part of psychological explanations.
 - Successful applications such as behavioural therapy and social learning theory have derived from the behavioural approach.
 - Learning theory can be applied to education with programmed learning.
- Weaknesses of the approach include:
 - It is based on the mistaken assumption that humans function in very similar ways to other species.
 - It is reductionist: equipotentiality doesn't exist.
 - It is deterministic and limits the role of internal factors.
 - It ignores the role of genetic factors.
 - It doesn't provide an adequate explanation of individual differences.

Methodology

- The methodology used by the behaviourists involved:
 - Use of the experimental method
 - Tight control of the experimental situation
 - The emphasis was on observing behaviour
 - The early behaviourists mainly used non-human species in their research.

Evaluation of the methodology

- Strengths of the methodology include:
 - It helped set the standard for subsequent researchers.
 - Behaviourists obtained relatively objective data and produced replicable findings.
 - They were able to show that certain forms of behaviour are determined by reinforcement or reward.
- Weaknesses of the methodology include:
 - It has a lack of external validity
 - It has an excessive emphasis on behaviour
 - It ignores internal factors
 - Behaviourist principles can be used in unethical ways.

THE PSYCHODYNAMIC APPROACH

Key Concepts

The term “psychodynamic” refers to any explanation that emphasises internal processes of change and development, i.e., the dynamics of behaviour or the forces that drive an individual to behave as he/she does. “Dynamics” are the things *driving* us or a machine to behave in particular ways. An example of a psychodynamic theory is Freud's account of psychosexual development.

Freud's theory and his method of therapy are both called psychoanalysis. The psychoanalytic perspective seeks to explain human development in terms of an interaction between innate drives and early experience. The basic assumption of Freud's approach is that early experience drives us to behave in predictable ways in later life. Childhood is a critical period of development. Infants are born with innate biological drives, e.g., for oral satisfaction. Such drives have a physical (sexual) basis. If these drives are not satisfied this can lead to personality or behavioural problems later in life, because our physical energies (libido) remain attached to these earlier stages and therefore the individual will regress [return] to that stage when experiencing anxiety.

A further key assumption is that *unconscious* forces motivate much of our behaviour. At any time if drives are thwarted or not satisfied, the ego copes by using ego defence mechanisms such as repression (i.e., forcing traumatic memories into the unconscious) and denial (i.e., denying that anxiety-provoking events happened). An individual may express such feelings in dreams and unconsciously motivated behaviours such as Freudian slips (involuntary but motivated errors in speech or behaviour).

Freud described personality dynamics in terms of various structures and stages. He argued that your ego is the conscious and intellectual part of your personality that regulates the id. The id is the primitive, innate part of your personality (concerned with basic motives), and the ego tries to deal with conflicts between the id and the superego. The superego is the moral part learned from parents and society. These parts are hypothetical entities (i.e., they don't physically exist). They develop through the stages of childhood: oral, anal, phallic, latency, and genital.

"Neo-Freudian" psychologists basically agree with the principles of psychoanalysis but have adapted the theory. Neo-Freudians produced psychoanalytic theories that placed less emphasis on biological forces and more on the influences of social and cultural factors. For example, Erik Erikson proposed a stage theory of social development where each stage is marked by a crisis that must be confronted and resolved with the help of other people or else the individual cannot move on. Erikson's stages started at age 1 and went through to old age. His perspective maintained some elements of classic psychodynamic theory—the unconscious and the components of personality—but placed greater emphasis on social influences and lifelong development.

Examples of the psychodynamic approach

Freud's psychodynamic approach is often used as an explanation for attachment, and also as a model of abnormality. The psychoanalytic perspective is also used to explain obedience—the authoritarian personality represses conflicting thoughts. It is used to explain the influence of childhood and adolescent experiences on adult relationships, lynch mobs, eating disorders and superstitions. In addition, Freud's ideas are used for the explanations of mental disorders and psychoanalysis as a therapy for addictions.

Evaluation of Key Concepts

Below we identify some of the major strengths and weaknesses of the psychodynamic approach. **Blue** words indicate the issue to which the point relates.

Strengths

- **Determinism:** Freud had a scientific background, and his claim that all behaviour is determined helped to convince sceptics that psychology could aspire to becoming a science.
- In studying psychology, it is important to try to take an unbiased view and reach an informed opinion. There is a tendency to be overcritical about Freud's theories, but remember that the theory was constructed during a different epoch from ours and his concepts were quite revolutionary for their time.
- Freud's ideas have endured—and not just in psychology. They appear in literature and art and everyday life. This testifies to the fact that there must be some important meanings in the theory. Many of these meanings have become such a part of commonplace knowledge that you aren't even aware they are Freudian. For example, when a person says something that appears to have hidden meaning, you might say "That's an unconscious slip". Hall and Lindzey (1970) suggested that the durability of the theory is due to Freud's broad and deep conception of human beings, one that combines the world of reality with make-believe.
- Freud is responsible for introducing certain key concepts to psychology, namely, the recognition that childhood is a critical period of development, and that unconscious sexual (physical) desires influence behaviour. Neither of these notions was recognised in the Victorian society of his formative period. Williams (1987) argued that "psychoanalysis has been society's most influential theory of human behaviour . . . it profoundly altered Western ideas about human nature and changed the way we viewed ourselves and our experience".
- Freud founded developmental psychology and devised a form of therapy unsurpassed for over 80 years. Psychoanalysis has been widely used and adapted, though it tends to be most suitable for literate and wealthy people because of the time and expense involved.
- Jarvis (2000) identified the most significant feature of Freudian theory as the notion that the human personality has more than one aspect: "we reveal this when we say things like 'part of me wants to do it, but part of me is afraid to . . .' ". Freud's introduction of the unconscious permits us to explain how we can be both rational and irrational. This can account for many aspects of our behaviour, such as the fact that people often predict they will behave one way and actually do something quite different.
- Individual differences: Freud put forward what is the first systematic theory of personality. This is of historical importance, although strangely it was several decades before other psychologists became interested in studying individual differences in personality.

Weaknesses

- **Reductionism:** Freud produced simple mechanistic explanations of much human behaviour, but these explanations oversimplify a complex reality
- **Determinism:** Freud argued strongly in favour of hard determinism, claiming that infant behaviour is determined by innate forces, whereas adult behaviour is determined by childhood experiences. However, Freud's theories failed to spell out in much detail how behaviour is determined. For example, Freud claimed that adult mental disorders are determined in large measure by certain childhood experiences, but we aren't told much about *how* events 10, 20, or 30 years ago exert their influence today.
- Much of the theory of psychoanalysis lacks **falsifiability**. For example, it isn't possible to devise an experiment to prove (or disprove) the notion that the mind is divided up into the id, ego, and superego.
- Those parts of Freud's theories that are testable have generally been found to be wrong. For example, Freud emphasised differences between males and females ("anatomy is destiny"), but most of the evidence indicates that males and females are more similar than he believed. This part of Freud's theorising can be criticised as being sexist as well as wrong. For example, Freud argued that fear plays an important part in the development of identification in boys. It follows that boys whose fathers are threatening and hostile should show more identification than boys whose fathers are supportive. In fact, what happens is exactly the opposite (Mussen & Rutherford, 1963). There is also very little evidence for the existence of the Oedipus complex or penis envy (Kline, 1981).

Methodology

Freud focused on the individual, observing particular "cases" in great detail, an **idiographic approach**. This was the approach Freud adopted when engaged in therapy. It has the advantage of providing unique insights into behaviour because of the depth of information collected. For example, his careful analyses of the dreams reported by his patients allowed him to develop a theory of dreams as wish fulfilment that has recently received some support from brain-imaging studies. However, it may not be justifiable to use *unique* observations to formulate general theories about human behaviour.

In addition to his focus on individual cases, Freud was also a keen observer of human behaviour. For example, he noticed that people often said or did things that were involuntary but that revealed their hidden desires—what became known as Freudian slips. Most of us would probably not have realised the significance of such errors.

Evaluation of Methodology

Below we identify some of the main strengths and weaknesses of the methodology used within the psychodynamic approach.

Strengths

- The main strength of Freud's approach to collecting data was that he studied individual patients over long periods of time, and so developed a reasonably full understanding of them and of their underlying motives. This case study approach is still recognised as an important approach to understanding human behaviour.
- Sometimes (as in his analyses of dreams or "Freudian slips"), Freud was able to develop important theories by integrating information obtained from a number of individuals.

Weaknesses

- The individuals studied by Freud were not at all representative. They were mainly middle-class Viennese women suffering from neurotic disorders living in a sexually suppressed culture in the nineteenth century. Freud recorded only one case history of a child (Little Hans) and that study was largely second-hand in that the data were obtained and interpreted retrospectively (after the event).
- It is probable that the evidence Freud obtained from clients during therapy was *contaminated* in the sense that what the patient said was influenced by what Freud had said previously. In addition, Freud may well have used his theoretical preconceptions to produce distorted interpretations of what the patient said.
- Even though Freud only studied individuals with mental disorders in depth, he nevertheless constructed a theory of normal development in his psychosexual theory. Not surprisingly, this theory was not based on much solid evidence concerning normal development.
- Much of Freud's evidence was basically in the form of *correlations* between certain childhood experiences on the one hand and adult personality or adult mental disorders on the other hand. Correlations can't prove causes, and so these correlations can't show that adult personality (or mental disorder) has been caused by childhood experiences.

SECTION SUMMARY: The Psychodynamic Approach

Key concepts

- A psychodynamic approach is one that explains the dynamics of behaviour.
- Freud's psychoanalytic theory identified the forces that motivate personality development and adult behaviour.
- The key assumptions of Freud's approach are:
 - Early experience interacts with innate drives, and this leads us to behave in predictable ways later in life.
 - Unconscious forces motivate much of our behaviour, due to ego defences that aim to protect the ego from feelings of anxiety.
 - Personality dynamics are related to personality structures (id, ego, and superego) and stages of development (oral, anal, phallic, latency, and genital).

- Neo-Freudians adapted the theory as follows:
 - They placed more emphasis on social and cultural, rather than biological, factors.
 - They developed ego analysis, which looks at current interpersonal problems and regards society as positive.
- The psychodynamic approach can help explain attachment, abnormality, prejudice and aggression, theory of dreams, moral development, gender development adolescence, and psychoanalysis as therapy.

Evaluation of the key concepts

- Strengths of the approach include:
 - Freud's scientific background could help psychology to be seen as a science.
 - Freud's theory was revolutionary for its time.
 - Freud's ideas have endured.
 - Many of Freud's concepts have come into everyday use. Within psychology he changed our views on childhood and the unconscious.
 - Freud founded development psychology and psychoanalysis.
 - His theory manages to combine both the rational and irrational elements of behaviour.
 - Freud put forward the first systematic theory of personality.
- Weaknesses of the approach include:
 - Freud provided simple mechanistic explanations of behaviour.
 - He failed to indicate in detail how behaviour is determined.
 - There is a general lack of falsifiability in psychodynamic theory.
 - Certain parts of Freud's theory that can be tested have been found to be wrong.

Methodology

- The methodology used within the psychodynamic approach focuses on:
 - The use of case studies in which individuals are studied in depth
 - Observation of human behaviour in everyday life.

Evaluation of the methodology

- Strengths of the methodology include:
 - The collection of rich and detailed information from individuals
 - The development of theories on the basis of acute observation and integrating information.
- Weaknesses of the methodology include:
 - The study of non-representative individuals
 - The difficulty of deciding the extent to which what patients said was unduly influenced by Freud's ideas
 - Freud developed a theory of normal development based on a study of individuals with mental disorders.

- o The problems of interpreting correlational evidence in which childhood experiences are correlated with adult mental disorders.

THE COGNITIVE APPROACH

Key Concepts

The cognitive approach is in some ways at the opposite end of the spectrum to behaviourism. Where behaviourism emphasises external observable events only, the cognitive approach looks at internal, mental explanations of behaviour. The word “cognitive” comes from the Latin word *cognitio* meaning “I apprehend, understand, or know”. These are all *internal* processes that involve the mind (brain processes)—processes such as those involved in perception, attention, language, memory, and thinking.

The cognitive approach is based on three main assumptions:

- Behaviour can largely be explained in terms of how the mind (or brain) operates.
- The mind works in a manner that is similar to a computer: inputting, storing, and retrieving data. Cognitive psychologists assume that there is an information-processing system in which information presented to it is altered or transformed. This information-processing system works in an integrated way, meaning that its various parts (e.g., attention, perception, memory) co-operate with each other to understand the environment and behaviour appropriately.
- Psychology is a pure science, based mainly on well-controlled laboratory experiments.

As you can see, the cognitive approach may be the opposite to behaviourism in some ways (e.g., focus on internal vs. external factors), but there are also some similarities. Both approaches are quite reductionist and experimental. The cognitive approach is reductionist in its use of computer analogies, and experimental in its attitudes towards research.

Historical development

Psychology developed properly as a science towards the end of the nineteenth century when Wilhelm Wundt founded the first psychological laboratory at the University of Leipzig in Germany. Wundt can be regarded as a cognitive psychologist. He studied mental processes and wanted to make such research more systematic. Instead of just developing his own ideas (like philosophers), he devised experiments to try to find evidence to support his theories. In this way he made psychology more scientific (seeking objective data on which to formulate theories).

Wundt argued that conscious mental states could be scientifically studied using **introspection**. Wundt’s introspection was not a casual affair but a highly practised form of self-examination. He trained psychology students to make observations that

were not biased by personal interpretation or previous experience, and used the results to develop a theory of conscious thought. Wundt didn't believe that this perspective could be applied to all aspects of human psychology, but he thought he could identify the elementary sensations and their interrelations, and thus identify the way that human thought was structured.

The advent of the computer age gave cognitive psychology a new metaphor, and the 1950s and 1960s saw a tremendous rise in cognitive psychology research and the use of cognitive concepts in other areas of psychology, such as social cognition and cognitive-developmental theories. If machines could produce behaviours that were analogous (i.e., similar) to animal behaviours then psychologists might be able to use information-processing concepts to explain the behaviour of living things. Or, to put it another way, cognitive psychologists could explain animal and human behaviour using computer concepts to explain how animals and humans process information. Another important difference from Wundt's approach is that cognitive psychologists over the past 50 years have typically focused on precise measurements of *behaviour* (e.g., time taken to perform a task) rather than on introspection.

The kind of concepts we are talking about are input, output, storage, retrieval, parallel processing, networking, schemas, filters, top-down and bottom-up processing, and so on. The cognitive perspective relies on the computer metaphor or analogy as a means of describing and explaining behaviour. However, the cognitive perspective involves more than the information-processing metaphor. It is a perspective focusing on the way that mental or cognitive processes work. Thus, *any* explanation incorporating mental concepts is using a cognitive perspective. For example, in social psychology (where the relationships between individuals are studied) there is a branch called "social cognition", which focuses on how one's thinking affects social behaviour. In developmental psychology, theorists such as Piaget explained behaviour in terms of mental operations and schemas, and so he has valid claims to be regarded as a cognitive psychologist.

Schemas

The concept of **schemas** (or sometimes "schemata") is one of the most important concepts introduced by cognitive psychology. It is the basic unit of our mental processes and is used at various points in this book. What is a schema?

A schema is a cognitive structure that contains knowledge about a thing, including its attributes and the relations among its attributes (Fiske & Taylor, 1991).

Why are schemas so important? The concept of a schema incorporates various critical features of our thought processes:

- A schema doesn't consist of a single dimension but of a cluster of interrelated concepts.

- A schema is derived from an individual's past experience and doesn't directly represent reality. Thus, we can use schemas to explain how people distort information along the lines of their past experience.
- Schemas are also socially determined. They are learned and refined through social exchanges (conversations with other people and from the media).
- There are many different kinds of schema. Schemas about events are called **scripts**. These schemas guide us when performing commonplace activities, such as going to the cinema or to a football match. Role schemas tell us about different roles, and self-schemas embody our self-concept. Schemas are an obvious outcome of our cognitive processes. We need to categorise and summarise the large amounts of information processed in order to generate future behaviour. We are "cognitive misers", meaning that we prefer to minimise the amount of information that we need to store and remember.

Evaluation of Key Concepts

The main strengths and weaknesses of the cognitive approach are discussed below. Blue words indicate the issue to which the point relates.

Strengths

- **Reductionism:** As we will see, the functioning of the human brain differs in many ways from that of computers. However, when you consider that the human brain has, over the years, been compared to a catapult, a telephone exchange, and a mill, you may agree that the comparison with computers makes reasonable sense!
- **Determinism:** The notion that behaviour is determined jointly by external stimuli and by internal processes (e.g., perception, attention, reasoning) is still accepted as important and useful.
- The cognitive approach was very important historically in moving psychology away from the dominance of behaviourism and in the direction of studying mental processes (cognitions).
- **Applications:** Cognitive psychology has been applied successfully in various ways, including providing advice about the validity of eyewitness testimony, how to improve your memory (useful for examination candidates!), and how to improve performance in situations requiring close attention (e.g., air-traffic control). However, its most useful application is in cognitive therapy, which has benefited the lives of hundreds of thousands of patients with mental disorders.

Weaknesses

- **Reductionism:** Most theories within cognitive psychology are reductionist in the sense that they involve "decoupling" or separating the cognitive system from the motivational and emotional systems. This is a weakness because motivational and emotional factors have a real influence on human cognition.

- **Determinism:** The cognitive approach successfully identified some of the factors determining behaviour, but it ignored others (e.g., social and cultural factors, genetic factors).
- **Nature–nurture:** One of the most puzzling features of the cognitive approach is its failure to consider the role of genetic factors in human cognition. There is substantial evidence that genetic factors influence individual differences in intelligence. However, this evidence has had very little impact on the cognitive approach, even though cognitive psychologists often study areas of human cognition (e.g., reasoning) much influenced by intelligence!
- **Individual differences:** There are large individual differences in cognitive processes such as memory, thinking, and reasoning, but most cognitive psychologists ignore these individual differences altogether.

Methodology

Psychologists working within the cognitive approach typically carry out laboratory studies based on the experimental method. In other words, the experimental situation is carefully controlled, and the effects of manipulating aspects of the situation on behaviour are carefully assessed. We can illustrate the strengths and weaknesses of the cognitive approach by considering a fairly typical experiment (Loftus & Palmer, 1974).

In the experiment by Loftus and Palmer (1974) on eyewitness testimony, there were five groups of participants, all of whom watched the same film showing a car accident. After watching the film, they were asked various questions, one of which had a different verb for each group: “About how fast were the cars going when they [hit/smashed/collided/bumped/contacted—the five conditions] each other?” Thus, the aspect of the situation that was manipulated was the precise wording of this crucial question. One week later, all participants were asked whether they had seen any broken glass caused by the accident (in fact, there wasn’t any broken glass).

Loftus and Palmer (1974) were interested in two measures of behaviour: (1) the estimated speed of the cars in answer to the crucial question; and (2) whether or not broken glass was reported. Participants in the “smashed” condition reported the highest car speeds, followed in descending order by “collided”, “bumped”, “hit”, and “contacted”. Participants in the “smashed” condition were more likely than those in the “hit” condition to report having seen broken glass: 32% vs. 14%, respectively. These findings suggest that eyewitness memory is fragile and easily distorted even when only a *single* word in a sentence is altered.

The study by Loftus and Palmer (1974) shows good experimental control—all five groups of participants were treated identically except for the verb in the crucial question. Thus, we can be confident that group differences in answers to the two questions depend on the precise verb used in the crucial question. However, it can certainly be argued that the experiment lacks mundane realism, since the

participants would have less affected emotionally by watching a film than by seeing a car accident in real life. The experiment probably lacked external validity because the participants knew something interesting was going to be shown to them and so were paying full attention to the screen—in real life, eyewitnesses are typically taken by surprise and often fail to pay close attention to the event or incident. However, these differences would *reduce* distortions of memory in the laboratory compared to the real world.

Evaluation of Methodology

Some of the most important strengths and weaknesses of the methodology used within the cognitive approach are itemised below. **Blue** words indicate the issue to which the point relates.

Strengths

- The type of experimentation used within the cognitive approach typically involves use of the experimental method. The high level of control obtained produces replicable findings having high internal validity.
- The experimental techniques used by cognitive psychologists have successfully identified important internal processes and structures (e.g., schemas) and have been used widely in other areas of psychology (e.g., social psychology).
- **Reductionism:** The cognitive approach to experimentation is reductionist in the sense of focusing on basic processes and comparing human cognition to computer functioning. However, it has nevertheless produced many findings that are applicable to the real world. For example, laboratory studies on eyewitness testimony have produced several findings (e.g., distortions of eyewitness memory by subsequent information) that are consistent with what has been found in real-life situations in spite of issues relating to external validity.

Weaknesses

- **Reductionism:** Cognitive psychologists typically try to study some aspect of human cognition while minimising the impact of emotional and motivational factors on performance. That inevitably means that we obtain only a limited perspective that can lack external validity.
- **Reductionism:** The previous point indicated one way in which research in cognitive psychology lacks external validity. More generally, participants in most cognitive experiments are well-motivated, undistracted, have no other goals competing with task completion, and know exactly what they are supposed to do with the task stimuli—that doesn't sound much like the real world!
- **Individual differences:** In most studies carried out by cognitive psychologists, there is no attempt to assess *any* aspects of individual differences (e.g., intelligence, motivation) even though there are large individual differences in performance on most cognitive tasks.

SECTION SUMMARY: *The Cognitive Approach*

Key concepts

- The cognitive approach focuses on internal, mental activity as a means of explaining behaviour. It is based on three key assumptions:
 - Behaviour can be explained in terms of how the mind works.
 - Behaviour can be understood using information-processing analogies.
 - Experimental research is desirable.
- The historical development:
 - Wundt's early work used introspection as a means of objectively studying mental processes.
 - This approach to research was rejected by the behaviourists as too subjective, but the advent of computers offered cognitive psychology a new vocabulary and set of concepts.
 - Cognitive explanations are not all based in information processing but share a focus on mental activity.
- The word (and concept) "schema" is by now used throughout psychology. It is so pervasive because:
 - It is multi-dimensional
 - It embodies the influence of expectations and social constructions
 - It expresses our tendency for cognitive economy.
- Strengths of the approach include:
 - The fact that there are important similarities between human and computer functioning
 - The emphasis on internal as well as external determinants of behaviour
 - The historical importance of cognition
 - Applications such as cognitive therapy.
- Weaknesses of the approach include:
 - Largely ignoring motivational and emotional influences on cognition and behaviour
 - Ignoring the role of social and cultural factors
 - Neglect of the role of genetic factors in cognition
 - Ignoring individual differences.
- In terms of methodology, the cognitive approach typically involves carrying out laboratory experiments based on the experimental method.
- Strengths of the methodology include:
 - Producing replicable findings with high internal validity
 - The identification of important cognitive structures (e.g., schemas)
 - Producing some findings that can be applied to the real world.
- Weaknesses of the methodology include:
 - A limited perspective that can lack external validity
 - The artificial nature of the experimental situations used
 - The failure in most cognitive research to assess or consider any aspects of individual differences.



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