

PSYCHOLOGY IS THE SCIENCE OF BEHAVIOUR AND EXPERIENCE

Armchair psychology

People like to offer their own explanations for why people do what they do.

Psychologists go beyond common sense and beyond personal opinions. The single thing that matters most in psychology is evidence. Real psychologists, as opposed to armchair ones, are expected to provide evidence for their every utterance (well, almost every one).

Evidence doesn't come from personal experience, or subjective opinion. It comes from what we call **empirical evidence**, which is what research studies are all about.

Research studies are crucially important, and form the foundations of psychology. Psychologists do research studies – they write down what they did (**procedures**) and what they found (**findings**). Then other psychologists can read about the studies and criticise them or try something similar.

But let's not be too dismissive of that armchair theorising. That's the starting point of our psychological knowledge. We then use the evidence from studies to evaluate our theories, to change and develop them, to get as close to the truth about behaviour as we scientifically can.

The key word is **science**.

We think science is the best thing since sliced bread – but actually it isn't a 'thing', it's a *process*. It is a wonderful process that enables us to get closer and closer to understanding the world. This is the process:

Step 1: Identify a research question or issue. This usually stems from observing an interesting behaviour, or from a broader psychological theory.

For example (and lets take a simple example), have you ever heard the saying 'familiarity breeds contempt' or 'absence makes the heart grow fonder'? So which is true?

Step 2: Decide on a topic to study (your **aim**) and (if appropriate) form a testable **hypothesis**. Your observations lead you to decide on a topic to study. In some kinds of scientific research a formal statement is made – a hypothesis. This is a statement of what you believe is true. You state this so that you can test to see whether it is supported by evidence and thus may reflect reality.

In order to test the idea we need to go with one of the views – familiarity leads to increased liking rather than contempt.

So here's our hypothesis 'You feel more positive about a word you hear ten times than something you hear just once'.

Step 3: Design a way to test your hypothesis. This is where it gets remarkable. The key feature of science (as you should know from GCSE) is that it is controlled. There are many different kinds of study but let's consider doing a controlled experiment like Festinger and Carlsmith's (previous page) – we get one group of people to do a task in one way and we get another group of people to do a task differently so we can compare them.

In fact Robert Zajonc (a well-known psychologist whose name just happens to be pronounced as 'Science' – yes, really) tested just such a hypothesis. He made up a list of words such as ZABULON and ENANWAL.

Participants were asked to listen to a list of words. One group of participants heard the word ZABULON 10 times in the list and a second group heard it once. The opposite was true for ENANWAL.*

Step 4: Carry out the study. It's very important to take due account of ethical issues when conducting the study (see facing page).

At the end participants were asked to rate how much they liked all the words in the list.

Step 5: Analyse the results and draw conclusions. You may present your results in a bar chart or may do a statistical test to see if your hypothesis is supported.

Zajonc found that participants did rate the words heard more frequently as more likeable. So we can conclude that familiarity does not breed contempt.

Step 6: Evaluate and feedback. If the hypothesis has been rejected by the analysis, then it needs to be revised and retested. So we form a revised hypothesis ...

However, there are criticisms of this study. Can you think of any?

Even if your hypothesis is supported, you might come up with further ideas to refine your original hypothesis ...

*When psychologists do research, the people in their studies are called 'participants'.

The even better news is, psychologists don't have all the answers. The truly great thing about psychology, the thing that really gets thousands of researchers and practitioners up in the mornings, is that there is still so much to learn and understand. There is still a lot of room for discussion and debate. And now you can join in.



A mysterious student has been attending a class at Oregon State University for the past two months enveloped in a big black bag. Only his bare feet show. Each Monday, Wednesday and Friday at 11.00 am the Black Bag sits on a small table near the back of the classroom. The class is Speech 113 – basic persuasion ... Charles Goetzinger, professor of the class, knows the identity of the person inside. None of his students in the class do. Goetzinger said the students' attitude changed from hostility toward the Black Bag to curiosity and finally to friendship.

Taken from the Associated Press, Feb 27, 1967

When Zajonc (1968) wrote a report of his study described on the facing page he began with the story above. It suggests that familiarity doesn't breed contempt – it actually breeds liking for something. At least in some situations...

He called this the *mere exposure effect*.

Validity

If you did think about the study by Zajonc on the facing page, one thought might have occurred to you – participants would have realised that some of the words were repeated a lot. This may have led at least some participants to try to guess what the study was about and alter their behaviour.

Therefore the results of the study actually don't represent anything real. This is an issue of **validity** – which refers to whether something is real or just an outcome of a research study that actually doesn't represent reality. Validity is a difficult topic so don't expect to get it all at once. But it is an issue of central importance in psychological research so you will need to get it eventually.

Internal validity

Internal validity concerns things *inside* a research study. It may be the question of whether we are testing what we actually intend to test. **In our familiarity example, do you think we were actually testing whether familiarity makes something more likeable?**

Internal validity also concerns the question of 'control'. It might be that other factors affected our findings. For example, some people might have heard the words ZABULON and ENANWAL before (not likely – that's why they were chosen). But if they had, that would have spoiled everything. Researchers need to try to control everything that could cause problems. This is something discussed in Chapter 6.

External validity

External validity is concerned with things *outside* the research study. To what extent can we generalise our research findings to other situations? **Do you think Zajonc's study could be used to explain why repeated adverts are very successful on TV?**

Research methods in psychology

Psychologists use a variety of methods in their research – all of them aim to be scientific because they seek to be objective and controlled and repeatable. Often psychologists conduct **experiments**, which means they can draw conclusions about cause and effect. The main issue with experiments is they can be quite trivial; just looking at a few variables doesn't always represent real life (you might feel that about Zajonc's study).

One alternative is to simply **observe** what people do in their everyday lives – psychologists watch people through two-way mirrors or from behind a bush in a park (not very often). The problem here is that, frequently, there is just too much going on to allow us to draw useful conclusions. Other methods include **questionnaires, interviews, case studies** and also performing **correlational analysis**.

The key is using all kinds of different methods to study one aspect of behaviour and considering how the findings from the different kinds of study inform us.

As research methods are so important to psychology, they feature very prominently throughout the rest of this book.

Ethics in psychology

Ethics refers to standards of behaviour, behaving with due respect for the people (or animals) you are studying. Ethical issues matter in psychology because the potential for causing damage is so much greater in psychology than it is in, say, chemistry. The subject matter of psychology is behaviour and the participants in research studies are human beings. It is all too easy to carry out studies that could expose people to embarrassment, anxiety, stress or even worse forms of **psychological harm**.

So psychologists are always very careful to include steps to reduce this possibility, to make sure that the dignity and welfare of participants are protected. Ethical guidance is issued by professional psychological associations such as the British Psychological Society (BPS) or the American Psychological Association (APA). These organisations publish codes of conduct that psychologists and researchers have to follow in their research and professional practice.

Statistical analysis in psychology

We've seen that conducting empirical research is a fundamental activity of psychology, but it would all be wasted effort if we didn't have a way of knowing what our results mean. This is where statistics come in.

There are two types of statistics in widespread use in psychology – **descriptive statistics** and **statistical tests**.

Descriptive statistics summarise data. They include measures such as the **mean** and drawing **graphs**. Such methods allow us to get a quick snapshot of the patterns in our data.

Statistical tests are based on **probability** (see Chapter 6). The key thing for you to know is they tell us if any pattern in our results is just due to chance.

APPROACHES

In Chapter 4 we discuss approaches in psychology, so this is a very brief introduction to support you until you get to that chapter.

The idea of an 'approach' is that psychologists tend to have a general view of what causes behaviour. Some of them think that the way we behave is largely inherited, others believe it is largely learned through your life experience.

For example – think about football.

What is it that makes someone interested in football or good at it? Did they inherit some kind of football gene from their parents or did they learn to love it perhaps because their family enjoyed kicking a ball around?

Psychologists call this **nature** (what you are born with) or **nurture** (your life experiences).

There are other key differences in the main approaches described on this page.



Nature or nurture? Or nappies?

Biological approach

The biological approach explains behaviour in terms of physical causes in our brains and bodies, and this includes our **genes**.

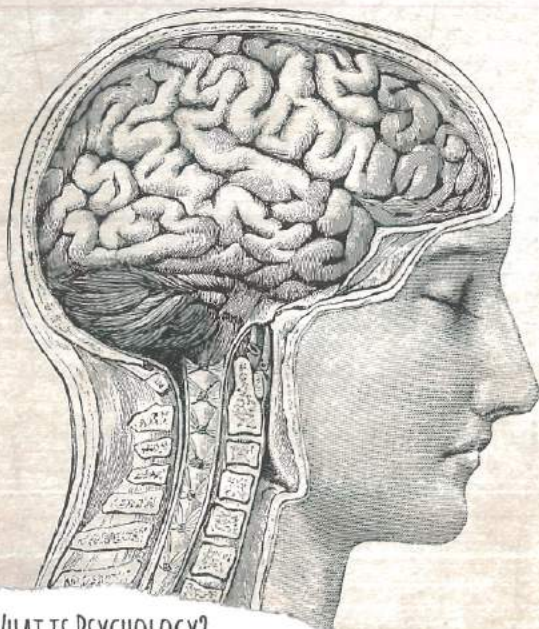
The most likely biological source of causes of behaviour is the brain, which produces chemicals called **neurotransmitters** (such as **serotonin**, which plays an important role in regulating our moods).

The **endocrine system** is also significant because it produces **hormones** (for example **adrenaline**) that have a big impact on our behaviour.

The methods used by this approach to investigate behaviour are physical too. **Brain scans** can show us the structure and functioning of the brain. Researchers then try to relate these to normal as well as abnormal behaviours. In the last 20 years the development of brain scanning techniques has led to a massive increase in understanding how the brain relates to behaviour.

Research on animals can be helpful too, because we can't deliberately make changes to the human brain to observe the effect on behaviour (no really, we can't, not for research purposes).

This approach to understanding behaviour is largely 'nature' – though many aspects of the brain and body and even your genes (surprisingly) can be changed by nurture.



Behaviourist approach

The central concept of this approach is the influence of experience on our behaviour, and how we *learn* behaviours. Basically we are born as 'blank slates' and what we become is shaped by experience (sometimes termed 'the environment').

Basically we either learn through association (**classical conditioning**) or **reinforcement (operant conditioning)**.

If you have cats you will know that they come running as soon as they hear a cupboard door being opened. They have learned to *associate* that noise with food.

You probably also know the usefulness of treats with animals – a small reward *reinforces* a behaviour and makes it more likely to happen in the future.

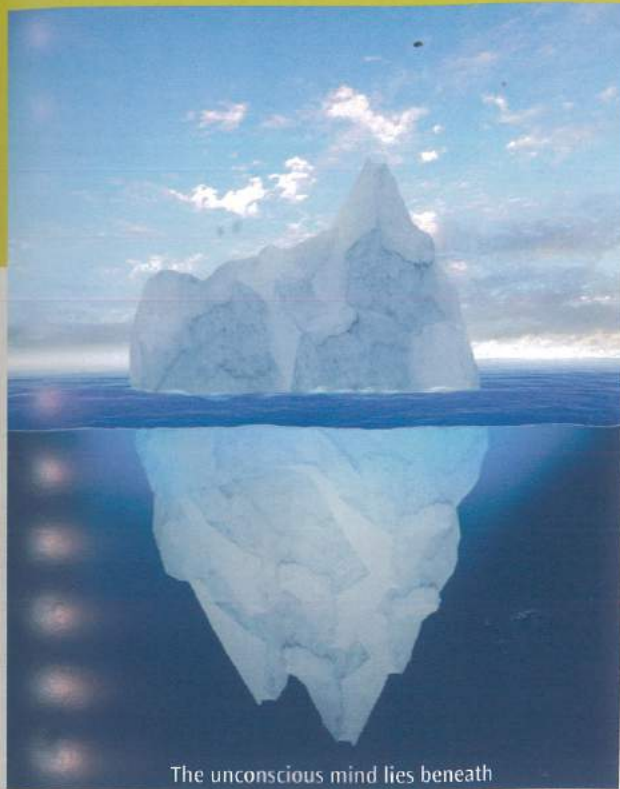
These are examples of classical and operant conditioning. Whatever characteristics we might be born with, these take second place to the crucial roles of our experience and the environment.

Because this approach is most closely associated with scientific psychology, it's no surprise that **behaviourists** are cheerleaders for the **experimental method** in psychology because it involves precise and objective measurement of behaviour in controlled conditions. The approach also uses research with animals, because it sees no significant qualitative differences between human and animal behaviour.

PS: There is also **social learning theory**, an extension of the behaviourist approach that incorporates indirect learning.



AS level students only need to study the biological, behaviourist and cognitive approaches. A level students go on to study the psychodynamic and humanistic approaches. We have covered all these approaches in Chapter 4.



The unconscious mind lies beneath

Psychodynamic approach

This is the approach that originated with Sigmund Freud, possibly the most well-known psychologist ever. He believed that the causes of behaviour lie within the **unconscious** mind, the part of the mind that is normally closed off to us but is extremely active. The iceberg metaphor has been used to represent this 'invisible' unconscious mind that has powerful effects (think Titanic).

There is constant dynamic conflict between parts of the unconscious and the conscious mind. We can get a brief glimpse of this conflict when we dream, which is why Freud advocated the use of dream interpretation to help us understand what's in the unconscious and why it affects us.

The approach also emphasises the importance of childhood experiences, which have a major impact on our personality development and our behaviour as adults.

Humanistic approach

The **humanistic approach** is firmly based on the concept of the self. This concerns issues to do with your self-concept (how you see yourself), and your **self-esteem** (how you feel about yourself).

The humanistic approach also emphasises the importance of being able to make our own rational choices. All of the other approaches suggest that our behaviour is, to a large extent, directed by other forces not always under our control – genes, the environment, our thought patterns, or our unconscious mind. Humanistic psychologists believe the goal of psychology is not prediction or control but to understand the whole person.



Cognitive approach

This approach focuses on thinking – our feelings, beliefs, attitudes and expectations and the effects they have on our behaviour.

The approach employs the 'computer metaphor' to explain how our minds work; like computers we process information.

The approach has been used to explain many things including mental disorders such as **depression**. According to the cognitive approach depression occurs because people *think* negatively – they put the worst possible interpretation on events and play down the good things that happen to them. They think it will never get better. According to the cognitive approach the depression lies in the way they are thinking rather than in reality.

Like behaviourist psychologists, cognitive psychologists use **lab experiments** as a key research method. But a big difference is that while behaviourists have no interest in what goes on inside the mind, cognitive psychologists are the opposite. The processes inside the mind are precisely what they are interested in and have an important link to the behaviours we observe.

Whatever works best

The distance from the biological approach to the humanistic perspective represents the huge range that is psychology.

Although researchers working in these two approaches may call themselves psychologists, they have very little in common in terms of their assumptions about behaviour, their preferred explanations, their philosophical viewpoints, the methods they use to investigate behaviour, or even the research questions they are interested in answering.

That's how broad a subject psychology is – and that's one reason why it's so exciting. These different approaches also reflect the undoubted truth that human behaviour is complex and is probably not going to be fully understood from just one approach.

Because of this, in recent years, there has been a growth of the eclectic approach. This is preferred by psychologists who aren't committed to any one particular approach. The eclectic approach uses the assumptions, explanations and methods from many different approaches. Their slogan could well be: 'Whatever works best'.

Eclectic aims to select
what is **BEST** in various
approaches, methods,
or styles

PSYCHOLOGY IN THE REAL WORLD

The goals of psychology

Consider one of the really important health issues of our times – the obesity crisis in Britain. Here's a disturbing statistic to be getting on with: 67% of men and 57% of women in Britain are overweight or clinically obese. Can psychology do anything to help? In the box on the right we use obesity as an example to illustrate what most psychologists seek to do with the research tools and knowledge at their disposal. So what is psychology for?

Describing behaviour

Psychologists want to be able to describe what is happening when people 'behave'. This is mostly a matter of observation. Psychologists observe how behaviours are related to each other. They might, for example, notice that certain behaviours occur together quite often and form a pattern. They might even begin to get an indication of which behaviours are 'normal' and which 'abnormal'. Eventually, after enough studies have been conducted, possible explanations of the behaviour emerge, which takes us on to the next goal of psychology.

Explaining behaviour

Describing behaviour is just a starting point. Psychologists really want to go beyond merely describing the behaviour that is happening and try to *explain* where it comes from, the reasons for it, what causes it. To do this, they formulate theories of behaviour then use the **scientific method** (see page 105) to test them. This of course is where disagreements emerge. There are many competing theories about the causes of behaviour, which often reflect the general **approach** psychologists adopt within psychology. Can psychologists do more than explain behaviour? Yes, they can predict behaviour.

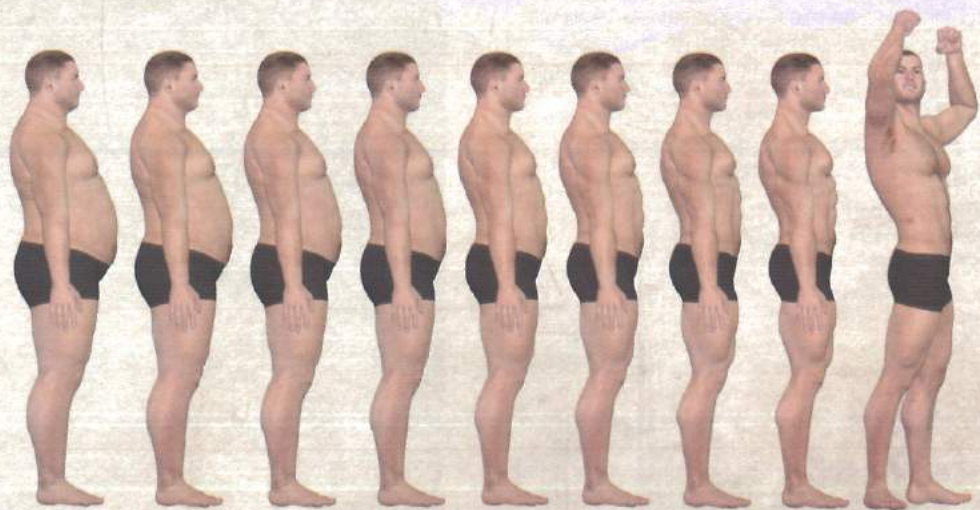
Predicting behaviour

This is the logical next step. Once we are confident that certain behaviours consistently occur under certain conditions, we can use that knowledge to predict how a person's behaviour (including their thoughts) might change in the future. These predictions (known as **hypotheses**) can be turned into statements that can be tested in studies.

Controlling behaviour

The idea that psychology should be in the business of controlling behaviour may have sinister overtones for some people. But what if we changed the language a little? What if we said that the ultimate goal of psychology is to *change* behaviour? This is unquestionably something that many branches of psychology attempt to do. For example, psychological therapies for mental disorders are not just about trying to understand or explain behaviours such as phobias or depression. The intention is to change people's behaviour, from **maladaptive** 'abnormal' behaviour that causes pain and suffering to adaptive, 'normal' behaviours that bring happiness (or less pain, at least).

Obesity is reaching epidemic proportions and has been described as a national crisis. There is much that psychology can do to help by using scientific methods to describe, explain, predict and change obesity-related behaviours.



Apply it

Concepts: Obesity and the goals of psychology

Describing obesity

Researchers use various research methods to work out what obesity is and how it relates to other factors. For example, they may use questionnaires or interviews to learn about attitudes towards eating in obese people. Psychologists might observe people's eating behaviour and measure how much people actually do eat. They might do **brain scans** to see if obese and thin people differ in thinking patterns.

Explaining obesity

The descriptions that are collected enable psychologists to develop explanations. There are several current explanations drawn from the whole range of approaches in psychology. There's a **biological explanation** that explains obesity in terms of the activity of **hormones** and other chemicals within the body. There's a **behavioural explanation** that focuses on past learning experiences of rewards and punishments involving food. There's also a **cognitive explanation** that emphasises the ways that we think about, interpret and perceive the meaning of food and eating.

Predicting obesity

If obesity is associated with inactivity, it is a short step to make the prediction that less active people are more likely to be overweight.

If we identify **depression** as one of the causes of obesity, then again it is a simple matter to predict that depressed people are more likely to be obese.

Controlling obesity

There may even be a political dimension to behavioural control (see 'The Nudge Unit' on the facing page). The obesity crisis is a good example. Because the costs of obesity are so high (especially type 2 diabetes) the government employs psychologists to devise programmes to change eating and exercise behaviours in people who are overweight.



YOU
CAN
DO
IT



Change behaviour

The Nudge Unit

This is the popular name for the *Behavioural Insights Team*, a department that was formed to apply psychology to government policies. Its aim is to change behaviour one small step at a time (that is, to 'nudge' people into making small changes, because they are more achievable).

For example, the Nudge Unit has devised projects to get more people to sign up to organ donation or to give blood, to encourage people to pay their taxes on time, to give more time and money to charity, reduce food waste, and so on.

They even tried to offer some advice to the England team at the World Cup in 2014, by applying psychological research to taking better penalties (ironically, the team never had the chance to put this advice to the test).

Here's another example of behavioural control:

The people at Schiphol Airport in Amsterdam wanted to know how you might stop men from missing the urinals and making a mess on the floor of the airport toilets. You could put up signs telling them to be more careful, or warning them of dire consequences if they don't get their aim straightened out.

But here's a better idea. Men (OK, *some* men) like nothing more than having something to aim at. So men's urinals at Schiphol Airport were given a small but significant redesign. A tiny black spot, in the shape of a fly, was inlaid into the middle of the pristine white porcelain urinal. It stood out like...well, like a fly on a white urinal.

Although no truly scientific studies have been conducted into the effectiveness of this method, apparently Schiphol's cleaning costs were reduced by 8%.

Why did you do psychology?

Some people think it will help them read other people's minds. Some people, when they find out you're doing psychology, really do say things like, 'I'd better watch what I say then,' or, 'Does that mean you're trying to analyse me?' They might even say, 'I had this really interesting dream last night. What happened was...' At which point, you might be wishing you'd said you were doing English Lit instead.

Apply it

Concepts: The science of self-talk

Motivating self-talk refers to the things we say to ourselves to get us moving or motivated to do something. We probably all do this from time to time but sportsmen and sportswomen use this technique more than most.

Sanda Dolcos and Dolores Albarracín (2014) noticed that there are two ways of using such self-talk – first person and second person. For instance, we can say to ourselves 'I can do it' (first-person) or 'you can do it' (second-person). But does this actually make a difference to performance? Dolcos and Albarracín suspected it does because it reminds us of our childhood experiences of encouragement, with people such as parents and teachers (hopefully) saying 'you can do it'.

The researchers got the participants to imagine themselves to be a character in a story. Participants had to write down the advice that they would give themselves to motivate themselves to complete a task (solving a set of anagrams). Half of the participants had to write their advice down in the first person and the other half in the second person. So the hypothesis they tested was: 'There is a difference in the number of anagrams solved by the participants who used first-person self-talk and those who used second-person self-talk.'

Dolcos and Albarracín found that more anagrams were solved when second person self-talk was used (17.53 on average) than with the first-person variety (15.96 on average). This does not look like a big difference, but statistical analysis showed that it was unlikely to be a chance result.

They concluded that second-person self-talk is more motivating than first person. However, whether this is really due to reminders of encouragement in childhood can't be conclusively decided by this one study. So more research is needed to test further hypotheses in order to narrow down the range of alternative explanations.

Questions

1. Briefly outline what behaviour is being described.
2. What explanation do the researchers propose for the behaviour?
3. How could this research be used to predict and control behaviour?

