

Psychology Transition work



The topics below will be covered in year 12.

Research methods

Research methods form the foundations of psychology and **run throughout the course.**

- How do psychologists test their hypotheses?
- What are the strengths and limitations of those different methods?
- How can psychologist try to ensure their results are valid?
- How can you present and interpret data?
- What are the implications of psychology for the economy?
- What ethical issues arise during psychological research?

Social influence

This topic is about how we are influenced by others.

- Why do we conform?
- What factors affect whether we obey or disobey?
- How can minorities influence the majority?

Memory

- What are the different types of memory?
- Why do we forget?
- How can are memory be explained?
- How accurate are eyewitness testimonies?

Attachment

This topic is about attachments formed between parents and their children

- Why and how do babies form attachments?
- What happens if the attachments are never formed or disrupted?
- How does attachment vary between cultures?
- How does attachment affect later life?

Approaches

An approach is a shared view, and there are different approaches used to explain human behavior

- What are the different approaches?
- What are the strengths and limitations?
- How can these approaches explain phobias, depression and OCD?

Psychopathology

This topic is about abnormality and mental illnesses.

- How do we define abnormality?
- How can someone be diagnosed with OCD, depression or phobias?
- How can mental illnesses be treated?

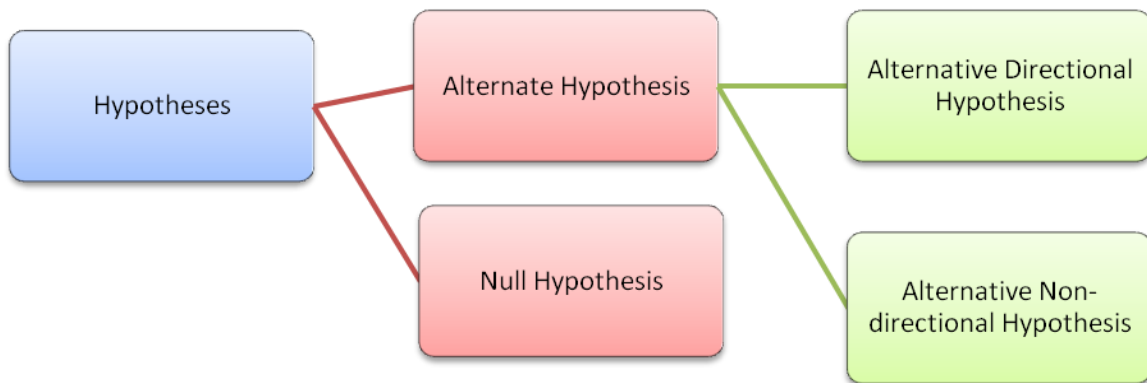
Aims, Hypothesis & its types

All studies have an **aim**; an aim is the purpose of the study. Having a written aim makes research more focused. It clarifies what it is that the researcher is trying to discover.

Definition: Aim of a study is a general statement of what the researcher intends to investigate. It highlights the purpose of the study.

Hypothesis is a precise, testable statement about the expected outcome of a piece of research. It states the relationship between the variables to be investigated.

Types of hypothesis



Alternate hypothesis is the same as definition of hypothesis.

Example:

- ✓ Levels of concentration will be low in high noise conditions.
- ✓ Regular exercise will lower the risk of health problems.

Null hypothesis is a statement of no difference or relationship between the variables being tested.

Example:

- ✓ There is no difference in the concentration levels between high and low noise conditions.
- ✓ There is no relationship between exercise and health conditions.

Directional hypothesis predicts an outcome or direction of the difference/ relationship between variables.

Example:

- ✓ Levels of concentration will be low in high noise conditions.
- ✓ Regular exercise will lower the risk of health problems.
- ✓ Sun exposure leads to higher chances of skin cancer.

} Notice the **DIRECTION** of the outcome.

Non directional hypothesis does not state the direction of the outcome for the variables being studied. Psychologists tend to use non directional hypothesis when there is no previous research to determine the outcome of the study or if the earlier research findings are contradictory.

Example:

- ✓ Levels of concentration will be effected in high noise conditions.
- ✓ Regular exercise will influence the risk of health problems.
- ✓ Sun exposure leads to chances of skin cancer.

Remember!

A good hypothesis should have an independent and a dependant variable written in clear and measurable form.

It should state the relationship between IV & DV and NOT the aim of the study.

And that you have chosen the right kind of hypothesis for the study- directional or non-directional.

Variables

A variable is any entity that can 'change' or 'vary.' Variables are used in psychological experiments to determine if changes in one can affect the other.

An **independent variable** (IV) is the variable that is changed/manipulated by the researcher (cause)

A **dependent variable** (DV) is the variable which is measured by the researcher as a result from the above manipulation. (Effect)

Example:

Participants were asked to complete a puzzle either alone or in a group with three other people. The time they took to complete the puzzle and the number of errors they made was recorded.

Aim: To see if time taken and errors made is effected by solving a puzzle alone or in a group.

Variable 1: doing the puzzle alone or in a group.

Variable 2: time taken to solve the puzzle and errors made.

Independent variable (IV): since the researcher can manipulate/ change the variable- if the participant should solve the puzzle being in a control condition ie solve the puzzle by himself or should be in an experimental condition ie solve the puzzle in a group.

Dependent variable: researcher is interested to see the effect of the change on performance. In this case, does being alone or being a group can effect time taken and errors made to while solving the problem.

'Operationalising' variables means to define the variables in clear & measurable forms.

Example:

Hypothesis 1- Participants were asked to complete a puzzle either alone or in a group with three other people. The time they took to complete the puzzle and the number of errors they made was recorded.

Hypothesis 2: participants who solved the puzzle alone completed it in 30 mins with 10 errors as compared to participants to who solved the puzzle in groups of 3, completed it in 45 minutes with 15 errors.

Can you highlight the difference in Hypothesis 1 and 2?

State the differences here:

What do you conclude about Operationalisation?

Worksheet 1

Identify the aim, Independent variable, & dependant variable in the following experiments:

Experiment 1

‘can you get people to perform better simply by raising their expectations?’

This was tested by telling musicians in one jazz band that they were playing a piece of music by a well respected composer. Musicians in another jazz band were told that their piece of music was a composer whose work was negatively reviewed. The first band should play better. However, there is a little problem with the design of the study. What if the first band played better because they were actually better? To overcome this problem, the experiment could be designed so that both bands played two musical pieces- piece 1 and piece 2.

Members of band A were told that piece 1 was by a superior composer and piece 2 by an inferior composer.

Members of band B were told that piece 1 was by an inferior composer and piece 2 by a superior composer.

Weick et al (1973) conducted this study and found that people did perform better if they thought they were playing well respected work. Participants also remembered the piece better and liked it more.

Questions:

- a) What is the aim of the experiment?

- b) What was the IV ?

- c) What were the two levels of IV?

- d) What was the DV?

- e) If participants did perform better what would you conclude from this study?

Question 2

Identify the AIMS and HYPOTHESIS in the following statements:

- a) To see if blondes have more fun than brunettes
- b) Art students are more clever than science students.
- c) Whether alcohol causes goldfish to have poorer memory than no alcohol.
- d) Positive expectations lead to differences in performances.

<p>Experiment</p>	<p>Jim investigates how food can affect concentration. Group A eat fruit for breakfast and complete a comprehension task, the number of mistakes are recorded. Group B eat chips for breakfast instead and the number of mistakes are recorded.</p>	<p>Salma investigates if people with deeper voices have more authority. A man with a deep voice asks a group of people to get up then the same group of people are asked by a man with a high voice to get up. Salma records how many of the participants get up.</p>	<p>Rebecca investigates if watching violent video games affects aggression. A group of children watch a violent film then complete an aggression questionnaire then the same group of children watch a non-violent film and complete an aggression questionnaire.</p>
<p>Independent Variable (IV)</p>			
<p>Dependent Variable (DV)</p>			
<p>EXT-What are some limitations of this design? Apply it to the scenario</p>			

Research the following key studies in psychology and complete the table below.

<p>Asch- conformity (1956)</p> <p>Independent variable:</p> <p>Dependent variable:</p> <p>Key findings:</p>	<p>Milgram- obedience (1963)</p> <p>Independent variable:</p> <p>Dependent variable:</p> <p>Key findings:</p>
<p>Lorenz- imprinting (1935)</p> <p>Independent variable:</p> <p>Dependent variable:</p> <p>Key findings:</p>	<p>Harlow- contact comfort (1959)</p> <p>Independent variable:</p> <p>Dependent variable:</p> <p>Key findings:</p>

Before we can carry out research in psychology, we must assess whether it is ethical or not. Read through the following ethical guidelines and answer the questions below.

Ethics comprehension task

Ethics are very important when carrying out any type of psychological research. These ensure that we treat participants correctly.



The British Psychological Society (BPS) has issued a code of ethics in psychology that provides guidelines for the conduct of research. Some of the more important ethical issues are as follows:

Informed Consent

Before the study begins the **researcher must outline to the participants what the research is about**, and then ask their consent (i.e. **permission**) to take part. However, it is not always possible to gain informed consent. This is acceptable **as long as what happens to the participants is something that could easily happen to them in everyday life**. For example, if the research involves observing people in a bus queue, those people may be observed by anyone when they are in the queue. Informed consent is needed from **children's parents** as they may be too young to consent.

Debrief

Participants must be thoroughly debriefed at the end of the study. They must be given a general **idea of what the researcher was investigating and why, and their part in the research should be explained**. They **must be told if they have been deceived and given reasons why**. They must be **asked if they have any questions** and those questions should be answered honestly and as fully as possible.

Psychological or physical harm

Researchers must ensure that those taking part in research will not be caused distress. They must be **protected from physical and mental harm**. This means you must not embarrass, frighten, offend or harm participants. Normally, the risk of harm must be no greater than in

ordinary life, i.e. participants should not be exposed to risks greater than or additional to those encountered in their normal lifestyles.

Deception

This is where **participants are misled or wrongly informed** about the aims of the research. For example, in Milgram's study of obedience the participants thought they were giving electric shocks to a learner when they answered a question wrong. In reality no shocks were given. If you have gained participants' informed consent by deception then they will have agreed to take part without actually knowing what they were consenting to. The true nature of the research should be revealed at the earliest possible opportunity, or at least during debriefing. If the participant is likely to object or be distressed once they discover the true nature of the research at debriefing, then the study is unacceptable.

Confidentiality

Participants, and the data gained from them must be kept **anonymous unless they give their full consent**. No names must be used in a research report.

Withdrawal from an Investigation

From the very start of an investigation, **participants must be aware of their right to stop participating in the study**. Even at the end of the study the participant has a final opportunity to withdraw the data they have provided for the research.

Task:

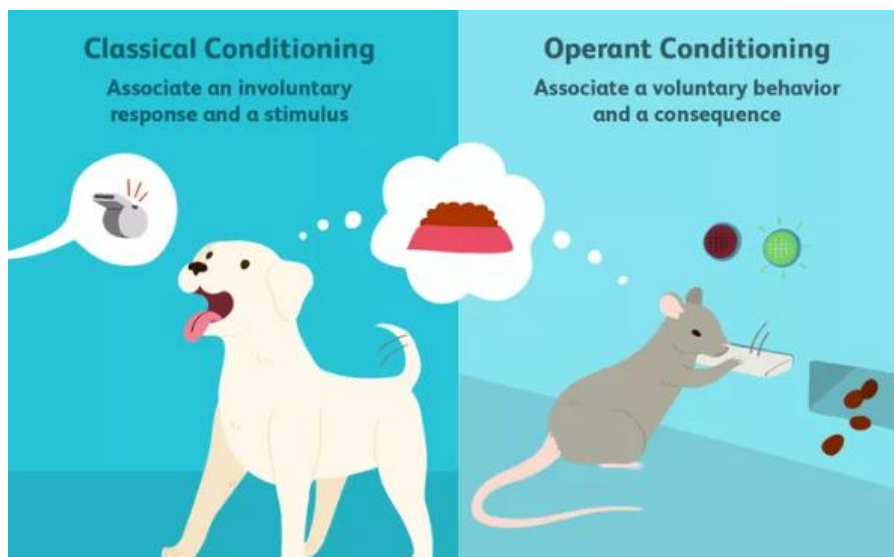
Why is the study below unethical? How is the study ethical? Use psychological language in your answer

Hasani et al (2007) wanted to find out if children that were smacked with shoes were better behaved than children that were not. He was a teacher at a school so he smacked half of his year 8 class with shoes when they were naughty but he didn't do this to the other half. He didn't get permission from the children's parents. At the end of the 2 week experiment he told the children and their parents exactly what the experiment was about and why he did it. When he wrote about the research he didn't publish any of their names he just gave them random letters. For example 'Student X was worse behaved when he was smacked with shoes'

There are many difference **approaches in psychology**. Each approach has a different outlook on human behaviour. Read through the information below and summarise the biological and behavioural approach in psychology.

Behaviourist approach

The assumption of the behaviourist approach is that only observable behaviour can, and therefore should, be investigated, as it cannot be known what is happening in 'the mind'. As humans and non-human animals are governed by the same basic processes, animal behaviour can be studied and applied to human behaviour.



Classical conditioning: Studied by Ivan Pavlov, this is the idea that learning takes place through association. Pavlov demonstrated this through experimenting on dogs. When he presented an unconditioned stimulus (food) alongside a neutral stimulus (ringing a bell), the dogs salivated (unconditioned response) at being presented with the food. Once the unconditioned and neutral stimulus were paired a few times, the dog salivated just at the sound of the bell being rung. The bell had become a conditioned stimulus, producing the conditioned response of salivation.

Operant conditioning: Studied by BF Skinner, this is the idea that learning takes place through rewards and punishments. Positive reinforcement is when a reward is given in response to a behaviour, making that behaviour more likely to be repeated. Negative reinforcement is when something unpleasant is avoided in response to a behaviour, making that behaviour more likely to be repeated. Punishment (an unpleasant consequence) makes a behaviour less likely to be repeated. Skinner tested these concept using rats and pigeons. In the 'Skinner Box', rats were placed in a box with a lever, light, and electrified floor. If the rat pressed the leaver when the light was off, it would receive a shock, and if it pressed the

lever when the light was on, it received a food pellet. The rats quickly learned to push the switch only when the light was on.

Evaluation:

- Behaviourism uses the scientific method, enhancing the replicability and validity of the conclusions drawn.
- Behaviourist principles have useful real-world applications, for example in developing treatments for phobias (systematic desensitisation) and token economy systems, where rewards are given for desirable behaviours in patients with mental illnesses. This increases the usefulness of behaviourism.
- The approach has been criticised for being too mechanistic, and discounting the role of thought processes in behaviour, instead seeing humans as passive responders to the environment. This is an over-simplistic explanation.

Behaviourist approach	
What is classical conditioning?	
What is operant conditioning?	
What are the strengths and limitations of this approach?	

Biological approach



Evolution and the genetic basis of behaviour

Charles Darwin's publication – *On the Origin of Species* (1859) – described the process of **natural selection**; characteristics that are not suited to a species' environment will die out as it struggles to survive, and with time will **evolve** over generations so that only **adaptive** characteristics remain in future offspring.

Genes are the genetic information carried by **DNA** in **chromosomes**, found within a cell's nucleus; they are passed on through generations of a species if individuals survive and successfully reproduce. In line with Darwin's theory of evolution, it might also follow that genes form a basis of behaviour, as both behaviour and genes appear to be **heritable**. An example might be aggressive behaviour, in light of obvious survival benefits such as warding off predators and competing for resources.

Nature-nurture debate

The **genotype** describes the genetic configuration of an individual, whereas **phenotype** describes the *combined* effects of genetic makeup and surrounding environment on behaviour. The **nature-nurture debate** highlights a key argument in psychology, over the relative influence of biology and environment on the characteristics of an individual; an extreme biological approach assumes that these are determined solely by nature.

Effects of brain physiology and neurochemistry

Interactions between regions of the brain help to control different functions, which biological psychologists assume to be significant in determining our actions. For instance, the occipital lobe is involved heavily in processing sight, along with the frontal lobe, which is thought to be involved in control and attention.

Electrical impulses enable an important means of internal communication that directs our behaviour, travelling around the brain and to/from the body via the **nervous system**. Impulses are transmitted between **neurons** (nerves) at **synapses**, junctions where **neurotransmitters** are released that **inhibit** or **excite** other neurons to achieve different responses. Neurochemical imbalances in the brain are often associated with abnormal behaviour – for instance, evidence suggests that imbalances of dopamine (a neurochemical linked with the brain's natural 'pleasure' system) are associated with mood disorders such as depression.

The **endocrine system** is a slower-acting communication system that regulates the circulation of **hormones**, released by **glands** into the bloodstream. For example, cortisol and **adrenaline** are key hormones that facilitate the **fight or flight response**, a key evolutionary survival mechanism whereby the body primes itself for imminent danger (e.g.

increasing heart rate, initiating sweating to cool down, dilation of pupils, sharpened sense of hearing).

Research methods used by the biological approach

Animal studies – used to investigate biological mechanisms that govern human behaviour, often where ethical guidelines would not allow human participation. Many species (e.g. rats) are thought to have a similar biological makeup to humans, such that studies' conclusions can be generalised to humans. However, this methodology still raises ethical debate, and some argue that complex human behaviour cannot be replicated in non-human animals like rats, and thus cannot be investigated.

Case studies – can investigate normal behaviour by observing behavioural abnormality alongside corresponding changes in biology. A very early example is the apparent personality alteration observed in Phineas Gage (mid 1800s) after a railroad construction accident drastically changed his physiology by forcing an iron rod through his brain's frontal lobe.

Drug therapy – behaviour can be manipulated by altering an individual's biochemistry, a research method that can ultimately lead to developing drug applications to improve health and wellbeing. Initial phases of research are usually conducted on non-humans.

Twin/family studies are useful for investigating the heritability of behaviour. For instance, research can investigate the likelihood that both of two twins develop a characteristic, known as a concordance rate. However, these studies can be time-consuming, due to long delays often required before follow-up data is collected. It is also difficult finding a large samples of participants for twin studies.

Evaluation of the biological approach

Strengths

- Scanning research techniques are useful for investigating the functions of the brain: an organ with obvious involvement in our behaviour that would otherwise be unobservable.
- The approach presents the strong nature viewpoint of the nature-nurture debate.
- The experimental methods used (gathering empirical [i.e. observable] evidence) make this approach very scientific.

Weaknesses

- The approach is considered reductionist; complex behaviour, thoughts and emotions are all equally explained by low-level biological mechanisms such as biochemicals and nerve impulses.

- An extreme biological approach does not account for the wide base of evidence that points to the influence of our environment (e.g. culture and society)

Questions:

- 1) What are the key assumptions of the biological approach?

- 2) How does this approach investigate human behaviour (refer to research methods/ studies in your answer)?

- 3) What are the strengths and limitations of this approach?

Tim is a very angry student. How would the **behaviourist** approach explain Tim's anger?



How would the **biological** approach explain Tim's anger?

Extension: How do you think the different approaches would treat Tim?

The biological approach is also used to explain the cause of some mental illnesses (for example, obsessive compulsive disorder) and provide treatments for these illnesses.

Task: Please read the information below on how the biological approach explains the causes and treatments of OCD and answer the questions.

OCD

Explaining OCD

The biological approach suggests that abnormal behaviour is caused by something physical happening in the body, which may be the result of genes.

Genetic explanations: Genes may create a vulnerability (risk of developing) to OCD. There is evidence that OCD runs in families. Lewis (1936) found that 37% of patients with OCD had parents with the disorder. The diathesis-stress model suggests that, along with this vulnerability, the environment may trigger OCD. There are many candidate genes involved in OCD (for example, those involved in the serotonin and dopamine systems), and it is polygenic: several genes are involved (perhaps up to 230). OCD is aetiologically heterogeneous, meaning different combinations of genes cause different types of OCD in different people.

Evaluation:

- Supporting evidence from Nestadt *et al* (2010) showed that 68% of identical twins were both diagnosed with OCD, compared to 31% of non-identical twins, suggesting there is a genetic basis.

- There are too many candidate genes for OCD- potentially hundreds. This means that finding a definitive genetic cause is very unlikely, reducing the usefulness of this explanation.
- There is evidence from Cromer *et al* (2007) that the environment is very influential- OCD was more severe in patients who had experienced traumatic events in their lives, and even more severe where patients had experience more than one event. This suggests the environment is more important than biology in developing OCD.

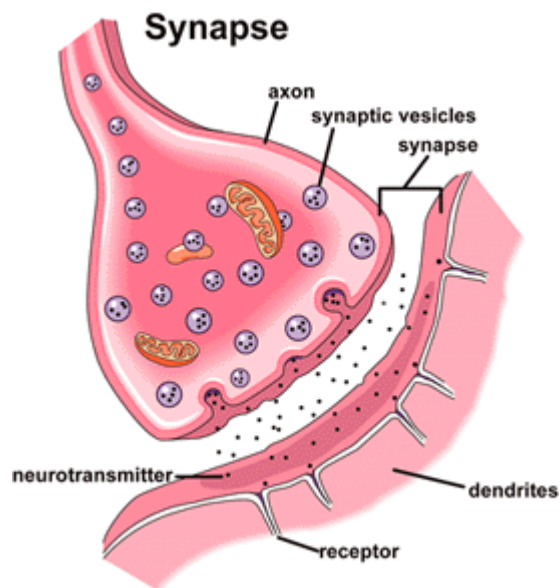
Neural explanations: Low levels of serotonin (a neurotransmitter) leads to impaired transmission of mood-relevant information, leading to a lowered mood. Low levels of serotonin are also linked to obsessive thoughts. Abnormal frontal lobe functioning leads to impaired decision-making, leading to symptoms of OCD. Abnormal functioning of the left parahippocampal gyrus leads to more processing of unpleasant emotions, which is a feature of OCD.

Evaluation:

- Supporting evidence from antidepressant studies shows that increasing serotonin levels reduces OCD symptoms, suggesting serotonin has a role in the development of OCD
- There is a lack of understanding what neural mechanisms are involved, making this an incomplete explanation.
- The cause-effect relationship not known- it could be that changes in the brain are a result of OCD, rather than causing it in the first place. This weakens the neural explanation.

Treating OCD

Drug therapies for abnormal behaviours aim to affect levels of neurotransmitter activity in the brain, by affecting the activity at synapses (gaps between neurons where neurotransmitters are active). Neurotransmitters are released from the pre-synaptic cell into the synapse, then are absorbed by the post-synaptic cell. Excess neurotransmitter is then reabsorbed by the pre-synaptic cell. Drugs increase synaptic activity by causing more neurotransmitter to be released, or introducing a chemical that acts like the neurotransmitter, or preventing reuptake of neurotransmitter. Activity may be decreased by increasing the rate of neurotransmitter breakdown, or blocking off receptors at synapses.



Drug therapy: SSRIs (selective serotonin reuptake inhibitors) are the most commonly prescribed drugs for OCD. These work by blocking the transporter mechanism that re-absorbs serotonin into the presynaptic cell after it has fired. As a result, more serotonin is left in the synapse to be absorbed by the post synaptic cells. Dosages vary with the patient, and it takes 3-4 months for benefits to show. An example of an SSRI is Fluoxetine. Often SSRIs will be combined with CBT.

Other drugs include tricyclics, for example Clomipramine, which work in the same way as SSRIs but have more side effects. SNRIs work on noradrenaline as well as serotonin, and may also be used. These other drugs will be prescribed where a patient is not responding well to SSRIs.

Evaluation:

- One strength of drug therapy for OCD was shown by Soomro _et al _(2009). In this study, it was found that SSRIs were significantly better than placebos (fake drugs) at reducing OCD symptoms, showing that the drugs are effective.
- Compared to psychological treatments, drug therapy is easy and non-disruptive, as the patient just needs to take a pill rather than undergoing lengthy therapy sessions. This is a strength because the treatment suits people no matter what their lifestyle, job, and so on.
- A weakness of drugs is that they can have side effects, for example indigestion, loss of sex drive, blurred vision, weight gain and aggression. This weakens the use of drugs because patients may be less willing to take them, therefore their OCD symptoms will return.

Questions:

- 1) Which of these is not a behavioural characteristic of phobias- panic, avoidance, irrational beliefs, endurance?

- 2) Which aspects of OCD are obsessive?
- 3) According to the two-process model, how are phobias acquired?
- 4) In systematic desensitisation, what do the therapist and patient construct?
- 5) What is Ellis's explanation of depression known as?
- 6) Which neurotransmitter is associated with OCD symptoms?
- 7) What does SSRI stand for?
- 8) Who found that SSRIs were superior to placebos in treating OCD?