

Biological Area

The biological approach believes our behaviour to be a consequence of our genetics and physiology. It examines thoughts, feelings and behaviour from a biological point of view. It believes psychology should be seen as a science and should be studied in a scientific manner through the use of objective measures and objective equipment (PET, MRI scans). It assumes that behaviour is caused by physiological processes such as brain function and hormone levels that are ultimately dictated by genetics.

1. Principles and Concepts:

1. Behaviour is a consequence of physiology e.g. genetics and hormones
2. All thoughts, feelings and behaviour have a biological cause
3. Psychology is a science and should be studied in a scientific manner using objective methods

2. Research to Illustrate the Area:

Sperry (split brain) - Shows how alterations to the brain can change their abilities and which hemispheres are in control of which behaviours. Shows how their behaviour had a biological cause as a split brain altered their ability to perform certain tasks.

Casey (delay of gratification) - Looked to see whether there is a neural basis to self-regulation and showed how behaviour remains constant as people develop. Used objective methods to study which areas of the brain are more active in different people whilst completing go/no-go tasks.

Blakemore and Cooper (early visual experiences) - Looked at the impact that the visual environment had on cats' brains. Showed how neurons can develop differently depending on the environment a cat grows up in and how this can alter their behaviour.

Maguire (taxi drivers) - Illustrates how different people use different parts of their brain and how these parts can change and develop, depending on the demand for their use. Shows that behaviour can change due to changes in the brain. Used objective methods to measure this.

3. Strengths and Weaknesses of the Area:

Strengths	Weaknesses
<ul style="list-style-type: none">- Scientific- Useful- Ethical- Objective methods used- Practical applications- Explains causes of abnormal behaviour	<ul style="list-style-type: none">- Low ecological validity- Reductionist- Deterministic- Ignores environmental factors- Focuses on nature too much- Develops theories that don't apply to everyone

One strength of the biological area is that it uses lots of objective methods therefore is scientific. Casey's research into delay of gratification used an fMRI machine to look at the difference in brain behaviour of high and low delayers. This is a strength because we can use these to see which parts of the brain are used the most when doing different tasks. It can also explain why some people are low delayers and others are high delayers, offering evidence as to why they are either one of these.

Another strength of the biological area is that it strongly supports the nature side of the nature/nurture debate. Maguire's research into the brains of taxi drivers demonstrated that taxi drivers had increased grey matter volume in their right and left posterior hippocampi whereas non-taxi drivers had more in their left and right anterior hippocampi. This is a strength because it enables us to understand what behaviour are affected by your biology, and looking at how your job can alter your brain and the way in which a person thinks.

Another weakness of the biological area is that it has low everyday realism. Casey's study into the delay of gratification used a quasi-experiment in a lab which gave it high control but low ecological validity. This is a weakness because it is much harder to generalise the findings from the study as they are not representative of the real world. Because it took place in a lab and a standardised environment, it means this may have influenced how people would have reacted and although this says it is down to your biology, it could also be influenced by external forces, such as those around you and the environment you are in.

Another weakness of the biological area is that it is very reductionist as it suggests that the human mind all comes down to your genetics and hormones as all behaviour depends on your biology. It fails to consider the cognitive processes in causing behaviour. Blakemore and Cooper's study investigated the effects of early visual experiences on the development of kittens and found that the environment that a cat is brought up in can have an effect on their behaviour as they develop. This is a weakness because this limits the thoughts on development as this area believes all behaviour is determined by biology but this is evidence that it can also depend on the environment, but it doesn't take this into consideration.

4. Applications of the Area

Mental Health - biological causes of disorders; atypical antipsychotics as a treatment for schizophrenia

Criminal Behaviour - genetics, brain function and abnormality (Raine et al.)

SAMPLE QUESTIONS

- (a) Describe **one** application of the biological area. [3]
- (b) Outline the procedure of Casey et al.'s (2011) study into neural correlates of delay of gratification **and** explain why this study has been placed in the biological area. [6]
- (c) Explain how research from the developmental area can be considered to support the nurture side of the nature/nurture debate. Support your answer with evidence from **one** appropriate core study. [3]
- (d) Discuss ways in which the biological area is similar to the developmental area. Support your answer with evidence from appropriate core studies. [8]
- (e)* Discuss the usefulness of psychological research placed in the developmental area. Support your answer with evidence from appropriate core studies. [15]

