



HL IB Psychology



Your notes

The Use of Animals in Research

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Overview: The Use of Animal Models in Research to Provide Insight into Human Behaviour

The use of animals in research

- Around 29 million animals per year are used in **experiments** in the USA and the EU
- Rats and mice make up around 80% of the total number of animals used in research
- The use of animals in experiments has fallen by half in the past 30 years as **ethical considerations** have become more prominent and technology has progressed so that their use is unnecessary
- Research into **behaviourism** drew strongly on animal models e.g. **Pavlov's dogs** and **classical conditioning**; **Skinner's rats** and **operant conditioning**
- Animals are also widely used in the **biological approach** e.g. the use of pigeons, mice and rats in understanding **drug tolerance** and **addiction**

Arguments which support the use of animals to provide insight into human behaviour

- Human beings are animals and it is only via **experimentation** that insight into particular types of behaviour can be achieved, particularly at the **biochemical** level of experimentation
- Using human beings as participants can only go so far, due to **ethical restrictions** placed on the use of humans in research: this is when the use of animals as subjects is useful
- There are some **perceived similarities** between human brains and animal brains, particularly with **higher-order** animals such as chimpanzees, who share 98.8% of their **DNA** with humans therefore this has real value as a model of human behaviour
- Some animal studies involve injecting animals with **hormones**, **lesioning** part of their brain or implementing **genetic modification**: all techniques that would be unethical to use on humans but which may provide **scientific breakthroughs**



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Animals in research: to use or not to use?

Arguments against the use of animals in research to provide insight into human behaviour

- There are strong **moral** and ethical arguments for not using animals in research: causing distress to the animal; depriving the animal of their **natural environment**; destroying the animal for the sake of the research; using animals without considering possible alternative solutions; the assumption that an animal life is less valuable than a human life
- Humans and animals share similarities but they are, clearly, not completely identical: humans are more sophisticated in terms of their **cognitions, motivations** and higher-order thinking than animals so the results of animal studies cannot be completely **generalised** to humans
- Some research using animals has been prone to **methodological flaws** e.g. not using **random allocation** to **conditions**, not using a **single-blind design**, **baseline measurements** being **unreliable**, testing the animals in the **artificial environment** of the lab, rather than in the wild

Research which investigates the use of animal models to provide insight into human behaviour

- Rosenzweig et al. (1972): neuroplasticity in rats' brains

- Fadda et al. (1996): neurotransmission in rats' brains
- Shively et al. (2009): the effect of elevated cortisol on monkeys' brains
- Martin et al. (2005): the role of pheromones in red-backed salamanders and territoriality
- Weaver et al. (2004): epigenetic changes in rats
- Lassi & Tucci (2017): gene-environment interaction and attachment in mice



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Examiner Tips and Tricks

Remember to offer a balanced argument when discussing or evaluating the value of animal models in research. Resist the temptation to only argue for or against their use as you will lose marks. Being overly passionate or emotional in an essay (even though you may feel justified about feeling this way) is not recommended as this is not the right forum for airing your personal views.



Worked Example

ERQ (EXTENDED RESPONSE QUESTION)

22 MARKS

The question is, 'Discuss the value of animal models to provide insight into human behaviour' [22]

Here is the introduction to this essay: note that it provides an overview of the topic, and gives a 'road map' of what the essay will cover:

Some psychological research uses animals, e.g. rats, as their subjects (only human beings are referred to as 'participants') in an attempt to apply the findings to human behaviour. An animal model is used in research for the purpose of better understanding behaviour without the added risk of causing harm to a human during the process for obvious ethical reasons (the protection of participants). Animals have been an important feature of psychological movements such as Behaviourism in the 1950s e.g. the reinforcement of reward on different schedules gave an insight into human gambling behaviour. Biopsychology has tested rats' navigation of a T-maze to highlight the role of ACh in learning and memory, an insight which would not have been achievable with human participants. This essay will consider the relative value of animal models in understanding human behaviour using research by Skinner (1951) and Fadda et al. (1996).